

# Memorandum



**Date:** May 19, 2015

Agenda Item No. 5(B)

**To:** Honorable Chairman Jean Monestime  
and Members, Board of County Commissioners

**From:** Carlos A. Gimenez  
Mayor

A handwritten signature in black ink, likely belonging to Carlos A. Gimenez, the Mayor.

**Subject:** Request by the Florida Power and Light Company to Modify Class I Permit CLI-2014-0312 for an Additional 2 Year Period for Temporary Impacts to 0.24 Acres of Halophytic Wetlands at SW 344 Street and Theoretical 356 Street, and the L-31E Canal at the Properties Identified by Folio Numbers 30-7029-001-0011, 30-7290-000-0010, and 30-7029-001-0012, Miami-Dade County

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Attached, please find for your consideration a request by the Florida Power and Light Company to modify Class I permit CLI-2014-0312. Also attached is the recommendation of the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (RER-DERM) and a proposed resolution approving the issuance of the Class I permit modification.

A handwritten signature in black ink, likely belonging to Jack Osterholt, the Deputy Mayor.  

Jack Osterholt, Deputy Mayor

# Memorandum



**Date:** May 11, 2015  
**To:** Carlos A. Gimenez  
Mayor  
**From:** Jack Osterholt / Deputy Mayor/Director  
Department of Regulatory and Economic Resources  
**Subject:** Request by the Florida Power and Light Company to Modify Class I Permit CLI-2014-0312 for an Additional 2 Year Period for Temporary Impacts to 0.24 Acres of Halophytic Wetlands at SW 344 Street and Theoretical 356 Street and the L-31E Canal at the Properties Identified by Folio Numbers 30-7029-001-0011, 30-7290-000-0010, and 30-7029-001-0012, Miami-Dade County

## **Recommendation**

I have reviewed the attached request to modify Class I permit CLI-2014-0312 by Florida Power and Light Company (FPL). Based upon the applicable evaluation factors set forth in Section 24-48.3 of the Code of Miami-Dade County (Code), I recommend that the Board of County Commissioners (Board) approve the modification of Class I permit CLI-2014-0312 for the reasons set forth below.

The applicant has requested a waiver of the Mayoral veto period to allow constructing the pipelines as soon as possible.

## **Scope**

The proposed project is located at SW 344 Street and theoretical SW 356 Street and the L-31E Canal in Commission District 9, which is represented by Commissioner Dennis C. Moss.

## **Fiscal Impact/Funding Source**

This resolution is a regulatory approval and does not have a fiscal impact as contemplated by Resolution No. R-530-10.

## **Track Record/Monitor**

The Natural Resources Division Chief, Lisa Spadafina, within the Department of Regulatory and Economic Resources, Division of Environmental Resources Management (RER-DERM), will be responsible for monitoring the proposed permit and modification.

## **Background**

FPL owns and operates a cooling canal system consisting of an approximately 5,900 acre network of unlined canals at the Turkey Point Power Plant. The cooling canal system was constructed in the early 1970s to serve as a heat exchange for four of the five power plant units at Turkey Point. Long term monitoring data indicate that water quality within the cooling canal system has deteriorated over time, resulting in a hyper-saline plume of cooling canal water that is migrating outside the boundaries of the cooling canal system through the groundwater pathway. Monitoring data have documented high levels of chloride in the groundwater west of the cooling canal system. In addition, salt intrusion at the base of the Biscayne Aquifer has migrated several miles inland in this area.

In August 2014, the South Florida Water Management District issued to FPL an Emergency Order authorizing the temporary installation of pipelines and associated equipment to transfer water from the L-31E Canal to the cooling canal system to moderate unusually high temperatures and salinity in the

system. In September 2014, the Board approved Class I permit application CLI-2014-0312 authorizing temporary impacts to halophytic (salt tolerant) wetlands for the temporary installation of pipelines to transfer water from the L-31E Canal to reduce salinity and temperature in the cooling canal system. As a condition of that approval and pursuant to the Class I permit, the temporary pumping activities ceased by October 15, 2014, and the pipes were subsequently removed. Staff has verified that FPL complied with all of the requirements of the Class I permit.

FPL has asked to modify the above referenced Class I permit to authorize the reinstallation of the pipelines and associated equipment in halophytic wetlands to provide additional pumping operations to be conducted from June 1 through November 30 in 2015 and 2016.

Section 24-48.13 of the Code provides for RER-DERM to issue modifications to Class I permits. However, if, in the opinion of the Director, the proposed modification will result in a substantial change to the project, said modification shall be subject to a public hearing before the Board. The previous approval by the Board for the subject Class I permit allowed the one-time installation of temporary pipelines in halophytic wetlands. The pipelines were required to be removed after pumping ceased in October 2014. FPL has requested authorization to re-install the temporary pipelines in halophytic wetlands to provide for pumping operations June 1 through November 30 in 2015 and 2016. Therefore, the modification request has been determined to be a substantial change, and is required to be processed as a standard form application with a public hearing.

Information provided by FPL indicates that the cooling canal system continues to experience high salinities, and as a result of these conditions, the system is not functioning effectively and is predicted to experience very high temperatures during the summer months that will likely affect power generating operations at the plant if no action is taken. Although the previous pumping operations provided temporary relief to the cooling canal system, the temperatures and salinity levels have since been increasing and the system's effectiveness has subsequently decreased.

On April 9, 2015, the South Florida Water Management District (SFWMD) issued a Final Order to FPL authorizing the temporary pump installation and water withdrawal from the C-103 Basin through the L-31E Canal to reduce salinity and to cool water in the system. The SFWMD's Final Order authorizes withdrawal of water from the L-31E Canal as a temporary measure to occur June 1 through November 30 in 2015 and 2016. As a condition of the Final Order from the SFWMD, pumping may only occur on individual days after the discharges to Biscayne Bay from that day equal or exceed the amount reserved pursuant to State rule for the protection of fish and wildlife in Nearshore Central Biscayne Bay, as determined daily by the SFWMD. The SFWMD final order specifies that pumping operations will be managed by FPL through the monitoring of real time data available on the SFWMD website.

Section 24-48.3 of the Code requires that RER-DERM evaluate environmental and related impacts including but not limited to hydrology, water quality, and any other environmental values affecting the public interest when deciding whether to recommend approval or denial of a proposed project. RER-DERM staff has reviewed FPL's proposal and conferred with staff at the SFWMD. Decreases in water quality, as observed in long term monitoring data, indicate that maintaining the existing operations of the cooling canal system is not sustainable. FPL has acknowledged that using water from the L-31E Canal to lower salinity in the cooling canal system is not a long-term solution. FPL is seeking approval to use water from the Floridan Aquifer, and FPL has represented that it is in the process of developing a plan for long-term management of the system. County staff has had discussions with FPL on various concepts for improving water quality within the cooling canal system, and on addressing existing and

potential future impacts of the cooling canal system on water resources in the adjoining areas. These include the possibility of FPL conducting hydrologic improvement projects in the area to maintain more freshwater on the landscape, reviewing operations at FPL's Everglades Mitigation Bank for any opportunity to improve water retention in the basin, reviewing interceptor ditch operations, and reviewing alternative sources of water for reducing the salinity in the cooling canal system. Although adding fresh or less saline water to the cooling canal system can reduce salinity within the cooling canal system, information provided by FPL predicts that this activity would likely cause further movement of the cooling canal system water into adjoining portions of the aquifer. To further address potential hydrologic and water quality impacts associated with this activity, the Class I permit will require water quality monitoring and will require FPL to take action if further unacceptable water quality impacts are observed. Additionally, to address potential future impacts associated with this permit, including, but not limited to, the exacerbation of existing impacts, this Class I permit will require FPL to submit a long term plan for managing operations of the cooling canal system in a manner that does not impact surface waters or adjoining portions of the aquifer in violation of County water quality standards. If this Class I permit is approved, the permit will require FPL to submit this plan to RER-DERM for review and approval within 180 days of permit issuance. The re-installation of the temporary pipelines for the 2016 proposed pumping event shall require administrative authorization, based on compliance with the conditions of the permit.

Section 24-48.3 of the Code also requires RER-DERM to evaluate project-related impacts on wetlands habitat values. The direct physical impacts from the construction of the proposed project will result in temporary impacts to approximately 0.24 acres of halophytic wetlands. However, these impacts have been minimized as much as practicable. All pipes and associated equipment will be required to be removed from the wetlands upon completion of the pumping operations on November 30 of each year. In addition, after the 2016 pumping activities conclude and the pipelines are removed, the applicant will restore the impacted area by re-grading, if necessary, and planting native species. Mitigation for the temporary impacts to halophytic wetlands will be satisfied through the purchase of mitigation credits from the Florida Power and Light Company Everglades Mitigation Bank.

The project site is not within an essential manatee habitat area. However, the Class I permit will require that all standard construction conditions regarding manatees be followed during all in-water operations.

The proposed project has been designed in accordance with all Miami-Dade County coastal construction criteria and is consistent with all Miami-Dade coastal protection provisions referenced in the Project Report attached as Exhibit F. The attached Project Report sets forth the reasons the proposed project is recommended for approval pursuant to the applicable evaluation factors set forth in Section 24-48.3 of the Code. The conditions, limitations, and restrictions set forth in the Project Report attached hereto are incorporated herein by references hereto.

#### **Attachments**

- Attachment A: Class I Permit Application
- Attachment B: Owner/Agent Letter, Engineer Certification Letter, and Project Sketches
- Attachment C: Zoning Memorandum
- Attachment D: Final Order Issued to Florida Power and Light Company by the South Florida Water Management District (SFWMD No. 2015-020-DAO-WU)
- Attachment E: SFWMD Standard Permit No. 14429
- Attachment F: RER-DERM Project Report




# MEMORANDUM

(Revised)

**TO:** Honorable Chairman Jean Monestime  
and Members, Board of County Commissioners

**DATE:** May 19, 2015

  
**FROM:** R. A. Cuevas, Jr.  
County Attorney

**SUBJECT:** Agenda Item No. 5(B)

Please note any items checked.

- ☐ "3-Day Rule" for committees applicable if raised
- ☐ 6 weeks required between first reading and public hearing
- ☐ 4 weeks notification to municipal officials required prior to public hearing
- ☐ Decreases revenues or increases expenditures without balancing budget
- ☐ Budget required
- ☐ Statement of fiscal impact required
- ☐ Ordinance creating a new board requires detailed County Mayor's report for public hearing
- ☒ No committee review
- ☐ Applicable legislation requires more than a majority vote (i.e., 2/3's \_\_\_\_, 3/5's \_\_\_\_, unanimous \_\_\_\_ ) to approve
- ☐ Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required

Approved \_\_\_\_\_ Mayor  
Veto \_\_\_\_\_  
Override \_\_\_\_\_

Agenda Item No. 5(B)

5-19-15

RESOLUTION NO. \_\_\_\_\_

RESOLUTION APPROVING THE REQUEST BY THE FLORIDA POWER AND LIGHT COMPANY TO MODIFY CLASS I PERMIT CLI-2014-0312, FOR AUTHORIZATION OF AN ADDITIONAL TWO YEAR PERIOD OF TIME FOR TEMPORARY IMPACTS TO 0.24 ACRES OF HALOPHYTIC WETLANDS AT SW 344<sup>TH</sup> STREET AND THEORETICAL 356<sup>TH</sup> STREET, AND THE L-31E CANAL AT THE PROPERTIES IDENTIFIED BY FOLIO NUMBERS 30-7029-001-0011, 30-7290-000-0010, AND 30-7029-001-0012, MIAMI-DADE COUNTY, FLORIDA

**WHEREAS**, this Board desires to accomplish the purpose outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA**, that this Board having considered all the applicable factors contained within Section 24-48.3 of the Code of Miami-Dade County, hereby approves the request by the Florida Power and Light Company to modify Class I permit CLI-2014-0312, for authorization of an additional two year period of time for temporary impacts to 0.24 acres of halophytic wetlands at SW 344<sup>th</sup> Street and theoretical 356<sup>th</sup> Street, and the L-31E Canal at the properties identified by folio numbers 30-7029-001-0011, 30-7290-000-0010, and 30-7029-001-0012, Miami-Dade County, subject to the conditions set forth in the memorandum from the Miami-Dade County Department of Regulatory and Economic Resources, a copy of which is attached hereto as Exhibit F and made a part hereof. The issuance of this approval does not relieve the applicant from obtaining all applicable Federal, State, and local permits.

The foregoing resolution was offered by Commissioner  
who moved its adoption. The motion was seconded by Commissioner  
and upon being put to a vote, the vote was as follows:

Jean Monestime, Chairman	
Esteban L. Bovo, Jr., Vice Chairman	
Bruno A. Barreiro	Daniella Levine Cava
Jose "Pepe" Diaz	Audrey M. Edmonson
Sally A. Heyman	Barbara J. Jordan
Dennis C. Moss	Rebeca Sosa
Sen. Javier D. Souto	Xavier L. Suarez
Juan C. Zapata	

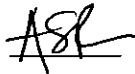
The Chairperson thereupon declared the resolution duly passed and adopted this 19<sup>th</sup> day of May, 2015. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this Resolution and the filing of this approval with the Clerk of the Board.

MIAMI-DADE COUNTY, FLORIDA  
BY ITS BOARD OF  
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By: \_\_\_\_\_  
Deputy Clerk

Approved by County Attorney as  
to form and legal sufficiency.



Abbie N. Schwaderer

**Attachment A**

**Class I Permit Modification Request**



January 23, 2015

Ms. Christine Hopps  
Environmental Resources Project Supervisor  
Miami Dade County Department of Regulatory and Economic Resources  
Coastal and Wetlands Resources Section  
701 N.W. 1st Court 6th Floor  
Miami, FL 33136

**RE: Florida Power & Light Company – Turkey Point  
Class I Permit Modification (CLI-2014-0312)  
Cooling Canal Augmentation Project**

Dear Ms. Hopps:

Florida Power & Light Company (FPL) is requesting modification of Class I Permit # CLI-2014-0312, issued on September 17, 2014, to install pipelines over Class I wetlands for the purpose of seasonal transfer of water from the L-31 E Canal to the Turkey Point cooling canal system. The current permit authorized temporary above-grade pipeline installation of 2 sets of pipe and pump systems, associated construction matting and equipment for the temporary transfer of water from the L-31E Canal to the FPL Cooling Canal System (CCS). The proposed modification would utilize the same design as previously approved.

No pumping of water was authorized past October 14, 2014 and the pipes, construction matting, and equipment were removed. The current permit expires on September 17, 2017. Enclosed is the permit application fee of \$12,720.00 (check number 5000345170).

Emergency Order (EO) #201-078-DAO-WU/ROW/ERP FPL was issued by the SFWMD to FPL on August 28, 2014. FPL will only transfer water from the L-31E when allowed by the SFWMD. The EO authorized FPL to divert surface water from the L-31E Canal in excess of the flows reserved for protection of fish and wildlife in accordance with Rule 40E-10.061, F.A.C. and which would have otherwise been discharged to tide via the S-20F, S-20G, and S-21A coastal structures. In lieu of requesting another EO for short-term coverage, FPL is requesting a recurring annual diversion of water from the L-31E under the SFWMD Consumptive Water Use Program. FPL is concurrently proposing to modify the existing USACE permit for the Project [SAJ-2014-02451(NWP/GP-MLC)].

The proposed work is necessary for the continued safe and reliable operation of the Turkey Point Plant. FPL appreciates your expedited review of the enclosed drawings and details. Please contact me at 561-691-2808 ([Matthew.Raffenberg@fpl.com](mailto:Matthew.Raffenberg@fpl.com)) or Stacy Foster at 561-691-7065 ([Stacy.Foster@fpl.com](mailto:Stacy.Foster@fpl.com)) if you have any questions.

Sincerely,

Matthew J. Raffenberg  
Director of Environmental Licensing and Permitting

**Attachment B**

**Owner/Agent Letter, Engineer Certification Letter, and Project  
Sketches**

**PERMIT APPLICANT / AUTHORIZED AGENT STATEMENT**

March 26, 2015

Miami Dade County Department of Regulatory and Economic Resources  
Class I Permitting Program  
701 NW 1<sup>st</sup> Court  
Miami, FL 33136

Re: Modification to Class I Standard Form Permit Number: CLI-2014-0312

By the attached Class I Standard Form permit modification request with supporting documents, I, Matthew Raffenberg, Director, Environmental Licensing and Permitting, am the permit applicant, and hereby request permission to perform the work associated with the modification to Class I Permit CLI-2014-0312. I understand that a Miami-Dade County Class I Standard Form Permit modification is required to perform this work.

If approval is granted for the proposed work by the Board of County Commissioners, complete and detailed plans and calculations of the proposed work shall be prepared by an engineer licensed in the State of Florida in accordance with the minimum requirements of Chapter 24 of the Code of Miami-Dade County, Florida. Said plans and calculations shall be subject to the review and approval of the Department. The permit applicant will secure the services of an engineer licensed in the State of Florida to conduct inspections throughout the construction period, and said engineer shall prepare all required drawings of record. In the event that the proposed work which is the subject of this Class I Permit application modification involves the cutting or trimming of a mangrove tree(s), a detailed plan of the proposed cutting or trimming shall be prepared by a licensed landscape architect and submitted to the Department for review and approval, and the permit applicant will secure the services of a licensed landscape architect to supervise the trimming or cutting.

Respectfully submitted,



Matthew Raffenberg,  
Director, Environmental Licensing and Permitting,  
Florida Power and Light Company



**ENGINEER LETTER OF CERTIFICATION**

March 26, 2015

Miami-Dade County Department of Regulatory and Economic Resources  
Class I Permitting Program  
701 NW 1<sup>st</sup> Court  
Miami, Florida 33136

RE: Modification to Class I Permit Number CLI-2014-0312

Ladies and Gentlemen:

This letter will certify that I am an engineer licensed in the State of Florida, qualified by education and experience in the area of engineering design and inspection, and that to the best of my knowledge and belief, the proposed work does not violate any laws, rules, or regulations of the State of Florida or any provisions of the Code of Miami-Dade County which may be applicable; that diligence and recognized standard practices of the engineering profession have been exercised in the engineer's design of the proposed work; and in my opinion based upon my knowledge and belief, the following will not occur:

- a. Harmful obstruction or undesirable alteration of the natural flow of the water within the area of the proposed work.
- b. Harmful or increased erosion, shoaling of channels or stagnant areas of water. (Not applicable to class IV permits)
- c. Material injury to adjacent property.
- d. Adverse environmental impacts from changes in water quality or quantity. (Applicable to class IV permits only)

Further, I have been retained by the applicant to provide inspections throughout the construction period and to prepare a set of reproducible record prints of drawings showing changes made during the construction process based upon the marked-up prints, certified surveys, drawings, and other data furnished by the contractor to me.

Sincerely,

Michael P. Whelan, P.E.

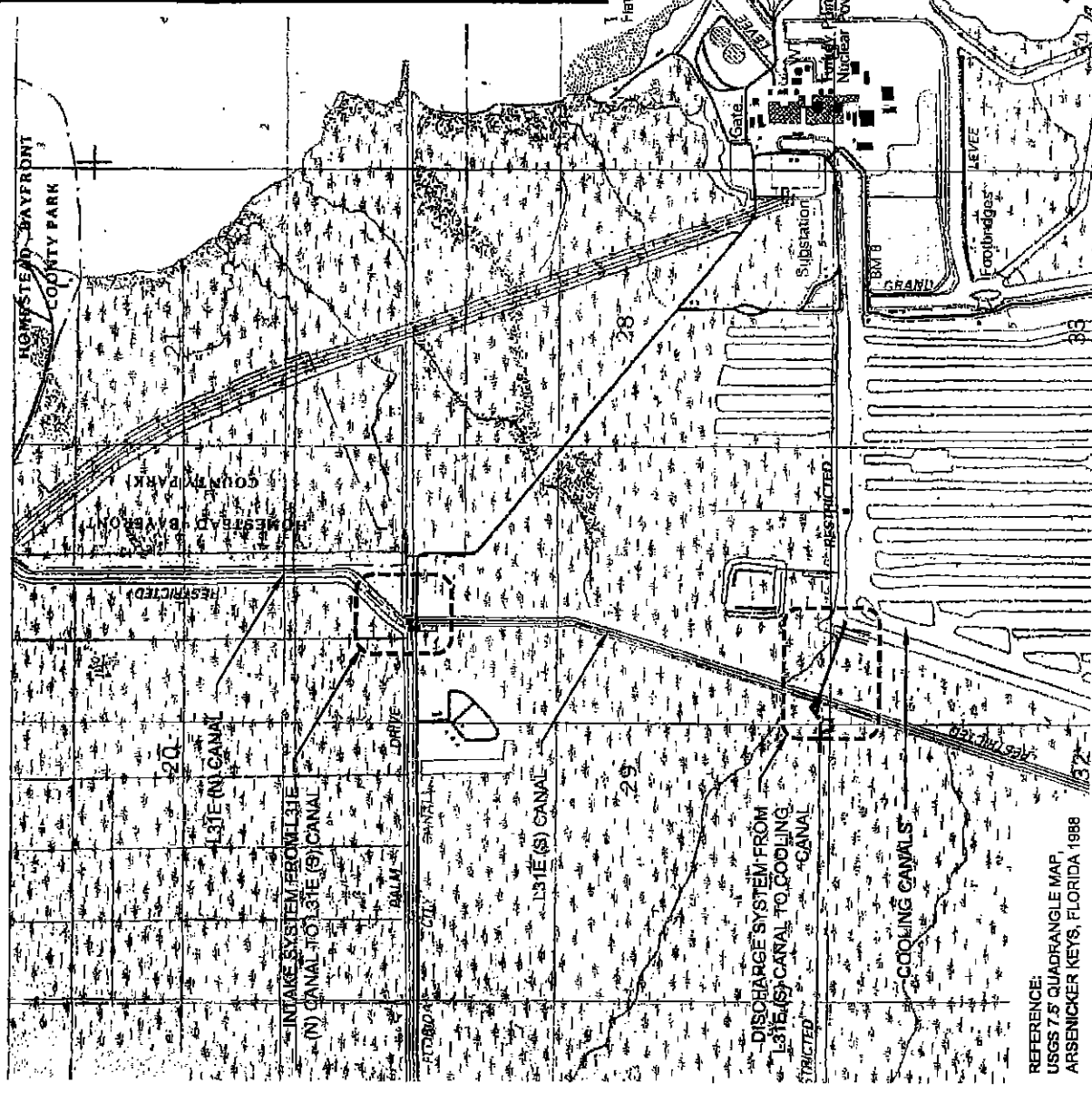
P.E. #55496

Taylor Engineering Certificate of Authorization #4815

Assistant Director, Waterfront Group

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REFERENCE:  
USGS 7.5' QUADRANGLE MAP,  
ARSENICKER KEYS, FLORIDA 1988

**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 1  
LOCATION MAP  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
DRAWN BY: CAS  
SHEET: 1 of 23  
DATE: 03-11-15

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

MICHAEL P. WHELAN P.E. 5804

DATE

## PUMPING DESCRIPTION, MONITORING, AND CONTROL PLAN

1. BRIDGE OVER PIPES ON LEVEE WITH CONCRETE BOX CULVERT DESIGN AND SOIL RAMPS. NO MODIFICATION TO THE DAM WILL BE REQUIRED.
2. A PRE-CONSTRUCTION SURVEY OF THE DAM CREST WILL BE PERFORMED BEFORE BRIDGE INSTALLATION AND DAM CREST WILL BE RESTORED TO AS GOOD AS OR BETTER CONDITION WHEN THE BRIDGE IS REMOVED.
3. PRIOR TO COMMENCEMENT OF CONSTRUCTION WITHIN ANY SOUTH FLORIDA WATER MANAGEMENT DISTRICT (THE DISTRICT) RIGHT OF WAY (ROW), FPL SHALL CONTACT THE DISTRICT'S FIELD REPRESENTATIVE AT THE HOMESTEAD FIELD STATION TO SCHEDULE A PRE-CONSTRUCTION MEETING AND FINAL INSPECTION.
4. FPL SHALL COMPLY WITH THE FOLLOWING ROW CONDITIONS:
  - A. ALL EQUIPMENT SHALL BE SKID MOUNTED OR LIE ABOVE GROUND AND BE CAPABLE OF BEING REMOVED FROM THE DISTRICT'S ROW WITHIN 24 HOURS OF THE DISTRICT'S REQUEST TO DO SO.
  - B. THE HDPE PIPES BURIED UNDER 344TH AVE SHALL BE BLANKED AT THE NORTH END, BUT LEFT IN PLACE, IN THE EVENT OF DISTRICT NOTIFICATION TO REMOVE EQUIPMENT.
  - C. THE HDPE PIPES BETWEEN THE L-31E CANAL AND THE SOUTH PUMPING STATION SHALL BE BLANKED AT THE CANAL END, BUT LEFT IN PLACE, IN THE EVENT OF DISTRICT NOTIFICATION TO REMOVE EQUIPMENT WITHIN 24 HOURS. THESE PIPES AND BRIDGING SHALL BE CAPABLE OF BEING REMOVED FROM THE DISTRICT'S ROW WITHIN 30 DAYS OF THE DISTRICT'S REQUEST TO DO SO.
  - D. ALL DISTRICT ROWS SHALL REMAIN IN A CONDITION TO ALLOW ACCESS FOR DISTRICT'S NORMAL AND EMERGENCY USE AT ALL TIMES.
5. FPL'S MONITORING AND CONTROL PLAN FOR PUMPING OPERATIONS SHALL COMPLY WITH THE FOLLOWING CONSTRAINTS:
  - A. THE PUMPS AND POWERPACK AT THE L-31E WITHDRAWAL LOCATION NORTH OF 344TH AVE (THE NORTH STATION) SHALL BE MANNED CONTINUOUSLY DURING PUMPING OPERATIONS.
  - B. THE PUMPS AT THE SOUTHERN WITHDRAWAL LOCATION (APPROXIMATELY ONE MILE SOUTH OF 344TH AVE) SHALL BE MANNED CONTINUOUSLY.
  - C. PERSONNEL AT BOTH PUMP LOCATIONS WILL BE PROVIDED CONTACT INFORMATION, MEANS OF COMMUNICATION, AND TRAINING TO UTILIZE THE EMERGENCY RESPONSE TEAM AT THE TURKEY POINT FACILITY.
  - D. THE PUMPS AT THE SOUTHERN WITHDRAWAL LOCATION SHALL BE INSTALLED, MANNED AND OPERATED BY TRAINED PERSONNEL FROM THE PUMP SUPPLIER.
  - E. EACH DAY PRIOR TO 10AM, THE FPL OPERATORS SHALL CONTACT THE DISTRICT'S

OPERATION CONTROL CENTER, VIA EMAIL, TO DETERMINE THE RATE AND VOLUME OF FPL WITHDRAWALS FOR THE 24-HOUR PERIOD FROM 10AM TO 9:59AM THE FOLLOWING CALENDAR DAY.

- F. FPL SHALL MONITOR PUMP STARTS AND PUMP STOPS AT BOTH PUMPING LOCATIONS (NORTH STATION AND SOUTH STATION). FPL SHALL ALSO MONITOR AND DATA LOG FLOW RATES OF THE L-31E WATER PUMPED AT BOTH LOCATIONS.
- G. FPL SHALL GENERATE A WEEKLY REPORT, DELIVERED VIA EMAIL BY NOON TUESDAY, WHICH REPORTS THE FOLLOWING TO THE DISTRICT FOR THE PRECEDING WEEK:
  - a. ID OF PUMPS THAT RAN
  - b. ON AND OFF TIMES FOR EACH PUMP
  - c. RPM SETTING, PER PUMP, IF VARIABLE
  - d. CALCULATED VOLUME OF WATER PER PUMP
  - e. LOGGED FLOWS AT EACH PUMP STATION, FROM TOTALIZING HOUR FLOW METERS.
- H. THE OFFICIAL TUESDAY REPORTS SHALL BE SENT FROM MATTHEW.RAFFENBERG@FPL.COM (OR DELEGATE) TO BOTH LLINDAHL@SFWMDC.GOV AND TO TBATES@SFWMDC.GOV (OR THEIR DELEGATES).
- I. FPL SHALL BE CAPABLE OF SUPPLYING THE ABOVE DATA UPON REQUEST AT ANY TIME BETWEEN TUESDAY REPORTS, WITHIN 2 HOURS OF THE DISTRICT'S REQUEST.
- J. FPL SHALL BE CAPABLE OF TERMINATING ALL PUMPING AT ANY TIME, WITHIN 2 HOURS AN EMAILED REQUEST FROM EITHER DISTRICT PARTY IDENTIFIED IN 5.G.F.
- K. EACH PUMP SHALL BE OPERATED BY TRAINED PUMP OPERATORS WHICH WILL BE ON SITE 24 HOURS PER DAY DURING OPERATION. THE PUMP OPERATORS WILL HAVE WIRELESS COMMUNICATION TO PROVIDE IMMEDIATE RESPONSE IF REQUIRED AND THIS SHALL BE VERIFIED AS OPERABLE PRIOR TO PUMPING.
- L. FPL SHALL WIRELESSLY COORDINATE THE PUMPING AT BOTH STATIONS TO ASSURE THAT:
  - a. FROM A NON-FLOW CONDITION, THE NORTH STATION PUMPS SHALL BE STARTED FIRST.
  - b. FROM A FLOW CONDITION, THE SOUTH STATION PUMPS SHALL BE STOPPED FIRST.
  - c. SOUTH STATION PUMPS SHALL BE STARTED AFTER 5 MINUTES OR MORE OF NORTH STATION PUMPS' STARTS, WITH EQUIVALENT FLOW MAINTAINED AT

**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 4675

FIGURE 2  
PROJECT NOTES  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034  
DRAWN BY CAS  
SHEET 2 of 23  
DATE 03-11-15

*Michael P. Wilman* 3/23/2015  
MICHAEL P. WILMAN P.E. 50486

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

## PUMPING DESCRIPTION, MONITORING, AND CONTROL PLAN (CONT.)

**BOTH STATIONS DURING OPERATION.**

- d. NORTH STATION PUMPS SHALL BE STOPPED AFTER 5 MINUTES OR MORE FOLLOWING SOUTH STATION PUMPS' STOPS.
- e. FPL SHALL PROVIDE THE PUMP CURVES USED TO DETERMINE DISCHARGE RATES TO THE DISTRICT, FOR EACH PUMP, PRIOR TO THEIR OPERATION.
- f. FPL SHALL MONITOR THE CANAL WATER LEVEL UTILIZING STAFF GAUGES TO ASSURE THAT UNDER NO CONDITIONS, THE WATER LEVEL IN THE SOUTH END OF THE L-31E CANAL IS LOWER THAN THE POINT AT WHICH THE PUMPS ARE FIRST STARTED. CONTROL OF THE PUMP OUTPUT TO GUARANTEE THIS WILL INCLUDE SHUTTING DOWN OR STARTING UP NORTH/SOUTH PUMPS AND/OR THROTTLING BACK OF INCREASING OF NORTH/SOUTH PUMPS TO COORDINATE FLOWS AND ENSURE THE CANAL WATER LEVELS ARE MAINTAINED.

L. FPL SHALL ENSURE THAT THE TOTALIZING HOUR FLOW METERS USED AT EACH PUMP STATION ARE AVAILABLE FOR PERIODIC DISTRICT INSPECTION AND VERIFICATION.

## 6. SPILL PREVENTION

- A. ALL EQUIPMENT WILL BE BERMED IN ACCORDANCE WITH FPL STANDARD PROCEDURES FOR SPILL PREVENTION AND CONTROL
- B. ALL EQUIPMENT, HOSES, AND TANKS SHALL BE DESIGNED FOR USE ON OR NEAR WATER. CONDITION CHECKS OF ALL FLUID CONTAINING DEVICES SHALL BE MONITORED CONTINUOUSLY AS A PART OF THE 24 HOUR PUMP COVERAGE.
- C. HYDRAULIC HOSES USED ON THE PUMPS NORTH OF 344TH AVE SHALL BE INSTALLED ACCORDING TO MANUFACTURES RECOMMENDATIONS. THE HOSES SHALL UTILIZE THE SHORTEST PATH OUT OF THE WATER THAT IS AVAILABLE TO ASSURE GOOD VISIBILITY FOR MONITORING. THE HOSES SHALL BE SECURED IN PLACE TO PREVENT OVER TENSIONING AND ALLOW FOR CONTINUOUS INSPECTION.
- D. THE HYDRAULIC PUMPS NORTH OF 344TH AVE WILL CONTAIN ONLY BIODEGRADABLE HYDRAULIC OIL DESIGNED FOR USE OVER WATER.
- E. ALL FUEL TANKS USED FOR THE SOUTHERN PUMPS HAVE BUILT IN SECONDARY CONTAINMENT, ALL FUEL LINES WILL BE PROVIDED WITH SECONDARY CONTAINMENT.
- F. THE PUMPS NORTH OF 344TH AVE. WILL BE FUELED TWICE PER DAY OR AS NEEDED. NO ADDITIONAL FUEL STORAGE WILL BE IN THE SFWMD RIGHT OF WAY.
- G. THE PUMPS SOUTH OF 344TH AVE WILL BE FUELED THROUGH NURSE TANKS ON SHORE AS NEEDED. THE TRANSFER LINES BETWEEN THE PUMP AND THE NURSE TANKS WILL NOT BE CHARGED WHEN NOT IN USE.

H. **FLOATING BOOM WILL BE STAGED ON SITE FOR IMMEDIATE DEPLOYMENT IF NEEDED. ENOUGH BOOM TO CROSS THE CANAL A MINIMUM OF TWO TIMES WILL BE PROVIDED. PUMP OPERATORS WILL BE PROVIDED EMERGENCY NUMBERS TO IMMEDIATELY DISPATCH A CLEANUP AND BOOM CREW FROM THE TURKEY POINT FACILITY.**

- I. A FIXED OIL BOOM WILL BE INSTALLED BOTH NORTH AND SOUTH OF THE FLOATING PUMPS IN THE SOUTHERN REACH.
- J. OIL ABSORBENT BOOMS AND PADS DESIGNED TO CLEAN UP PETROLEUM SPILLS ON WATER WILL BE LOCATED ON SITE. PUMP OPERATORS WILL BE TRAINED IN THE USE OF THESE MATERIALS.
- K. A DETECTED LEAK OF ANY PETROLEUM PRODUCTS (FUEL OR HYDRAULIC OIL) WILL RESULT IN THE IMMEDIATE SHUTDOWN OF THE PUMPS AT BOTH ENDS. THE PUMPS WILL NOT BE RESTARTED UNTIL ALL ISSUES HAVE BEEN RESOLVED AND THE EQUIPMENT CLEANED TO ALLOW FOR CONTINUOUS MONITORING.

## TECHNICAL SPECIFICATIONS

## DEFINITIONS

1. OWNER: FLORIDA POWER AND LIGHT (FPL).
2. ENGINEER: OWNER'S DESIGNATED REPRESENTATIVE FOR CONSTRUCTION INSPECTION AND OVERSIGHT.
3. ENGINEER OF RECORD (EOR): ENGINEER WHOSE NAME AND SEAL IS AFFIXED TO THE DRAWINGS AND SPECIFICATIONS.
4. CONTRACTOR: FPL'S DESIGNATED CONTRACTOR OR VENDOR OR, WHERE APPLICABLE, FPL STAFF.
5. U.N.O.: UNLESS NOTED OTHERWISE

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL INVESTIGATE THE PROJECT SITE PRIOR TO INITIATING ANY CONSTRUCTION.
2. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL STRUCTURES AND EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS.
3. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION TOGETHER WITH THE FPL PROJECT MANAGER TO ENSURE PUBLIC AND PRIVATE SAFETY IN AND AROUND THE CONSTRUCTION SITE.
4. DEMOLITION DEBRIS SHALL BE DISPOSED OF OFFSITE AT A LICENSED LANDFILL IN

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FIGURE 3  
PROJECT NOTES  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SERIAL
DRAWN BY	CAS	
SHEET	3 of 23	
DATE	03-11-15	
		DATE
		3/23/2015
		INFORMED: D. VIGIL, AN E & S ENGINEER

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

## TECHNICAL SPECIFICATIONS (CON'T)

ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.

5. THE CONTRACTOR SHALL LOCATE ALL ABOVE-GROUND AND BELOW-GROUND UTILITIES BEFORE BEGINNING WORK.
6. ENGINEERING DESIGN AND PERMITTING FOR UNDERGROUND CROSSING OF SW 344TH STREET COMPLETED BY AMERICAN SERVICES OF MIAMI, CORP. CONTRACTOR SHALL REFERENCE THESE DRAWINGS AND PERMIT FOR ADDITIONAL ROAD CROSSING DETAILS.

### SUBMITTALS AND TESTING REQUIREMENTS

1. ALL TESTING, EITHER PRE-CONSTRUCTION OR CONSTRUCTION, AS REQUIRED HEREIN OR IN THE CONTRACT DOCUMENTS, SHALL BE PERFORMED BY AN INDEPENDENT QUALIFIED TESTING COMPANY. THE COSTS OF ALL SUCH TESTING SHALL BE BORNE BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BID PRICE.
2. THE QUALIFIED TESTING AGENCY SHALL BE APPROVED PER FOOT STANDARDS, AASHTO STANDARDS OR SIMILAR SUCH STANDARDS AS APPROVED BY THE ENGINEER. ALL TESTING WORK SHALL BE DONE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN FLORIDA AND SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN FLORIDA IF REQUESTED.
3. THE CONTRACTOR OR APPROPRIATE VENDOR SHALL SUBMIT REQUIRED SUBMITTALS. ALL SUBMITTALS REQUIRE APPROVAL BY THE ENGINEER U.N.O.

### SUBMITTAL PROCEDURES

1. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL REVIEW THE SUBMITTAL REQUIREMENTS AND PROVIDE A SUBMITTAL LOG.
2. ENGINEER'S REVIEW OF SUBMITTALS DO NOT RELEASE CONTRACTOR FROM CONTRACTOR'S RESPONSIBILITY FOR PERFORMANCE OF REQUIREMENTS OF CONTRACT DOCUMENTS. NEITHER SHALL ENGINEER'S REVIEW RELEASE THE CONTRACTOR FROM FULFILLING PURPOSE OF INSTALLATION NOR FROM CONTRACTOR'S LIABILITY TO REPLACE DEFECTIVE WORK.
3. ENGINEER'S REVIEW OF SHOP DRAWINGS, SAMPLES, OR TEST PROCEDURES WILL BE ONLY FOR CONFORMANCE WITH DESIGN CONCEPTS AND FOR COMPLIANCE WITH INFORMATION GIVEN IN CONTRACT DOCUMENTS.
4. ENGINEER'S REVIEW DOES NOT EXTEND TO:

- a. ACCURACY OF DIMENSIONS, QUANTITIES, OR PERFORMANCE OF EQUIPMENT AND SYSTEMS DESIGNED BY CONTRACTOR.
- b. CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES EXCEPT WHEN SPECIFIED, INDICATED ON THE DRAWINGS, OR REQUIRED BY CONTRACT DOCUMENTS

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### FIGURE 4

#### PROJECT NOTES

FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE

MIAMI-DADE COUNTY, FLORIDA

- c. SAFETY PRECAUTIONS OR PROGRAMS RELATED TO SAFETY, WHICH SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

5. ENGINEER WILL BE ENTITLED TO RELY UPON THE ACCURACY OR COMPLETENESS OF DESIGNS, CALCULATIONS, OR CERTIFICATIONS MADE BY LICENSED PROFESSIONALS ACCOMPANYING A PARTICULAR SUBMITTAL WHETHER OR NOT A STAMP OR SEAL IS REQUIRED BY CONTRACT DOCUMENTS OR LAWS AND REGULATIONS.

### HDPE PIPE AND FITTINGS

1. POLYETHYLENE PIPE AND FITTINGS SHALL BE PE4710 MATERIAL AND SHALL MEET THE SPECIFICATIONS DEFINED IN ASTM D3350 FOR A CELL CLASSIFICATION OF 445674C/E.
2. PIPE SHALL BE IPS DR 26 OR DR 21 (PER ASTM F714) AS SPECIFIED ON THE DRAWINGS AND HAVING A MINIMUM WORKING PRESSURE RATING OF 80 PSI AND 100 PSI RESPECTIVELY. PIPE SHALL HAVE A SMOOTH INTERIOR WITH A MANNING'S N OF 0.011 OR LESS.
3. FITTINGS SHALL BE OF THE SAME TYPE, GRADE, MATERIAL AND MINIMUM WALL THICKNESS AS THE PIPE.
4. FITTINGS SHALL BE IPS WITH A WORKING PRESSURE RATING EQUAL TO OR GREATER THAN THAT OF THE PIPE AND JOINTS..
5. FITTINGS SHALL COMPLY WITH ASTM D3261, F1056, OR F2206 AS APPLICABLE.
6. BACK UP RINGS SHALL BE DUCTILE IRON. BOLTS SHALL BE ASTM A307, GRADE A GALVANIZED IN ACCORDANCE WITH ASTM A153.
7. FITTINGS, FLANGES, BACKUP RINGS AND OTHER APPURTENANCES SHALL BE SIZED FOR THE MAXIMUM ANTICIPATED WORKING PRESSURE AND ANY ANTICIPATED SURGE PRESSURES BUT NOT LESS THAN CLASS B (86 PSI).
8. INSTALL PIPE AND FITTINGS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ABOVE-GROUND INSTALLATIONS.
9. ALL PIPES SHALL BE JOINED USING HEAT FUSION IN ACCORDANCE WITH ASTM F2620. JOINTS SHALL BE BUTT FUSION WELDED, RESULTING IN A JOINT THAT IS INTEGRAL WITH THE PIPE AND AS STRONG AS THE PIPE ITSELF. WHERE BUTT FUSION WELDING IS NOT POSSIBLE PIPE SHALL BE JOINED USING EXTRUSION WELDING.
10. LAY PIPELINES TO THE GRADES (VERTICAL) AND ALIGNMENT (HORIZONTAL) INDICATED ON THE PROJECT DRAWINGS.

### HDPE PIPE AND FITTINGS SUBMITTALS

1. HDPE PIPE AND FITTING MATERIAL INFORMATION: SUBMIT DOCUMENTATION DEMONSTRATING THAT THE HDPE PIPE AND ASSOCIATED FITTINGS MEET THE SPECIFICATIONS.

PROJECT P2015-034

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DATE

03-11-15

DATE

03/23/2015

MICHAEL A. WIGLEY, P.E. 0500

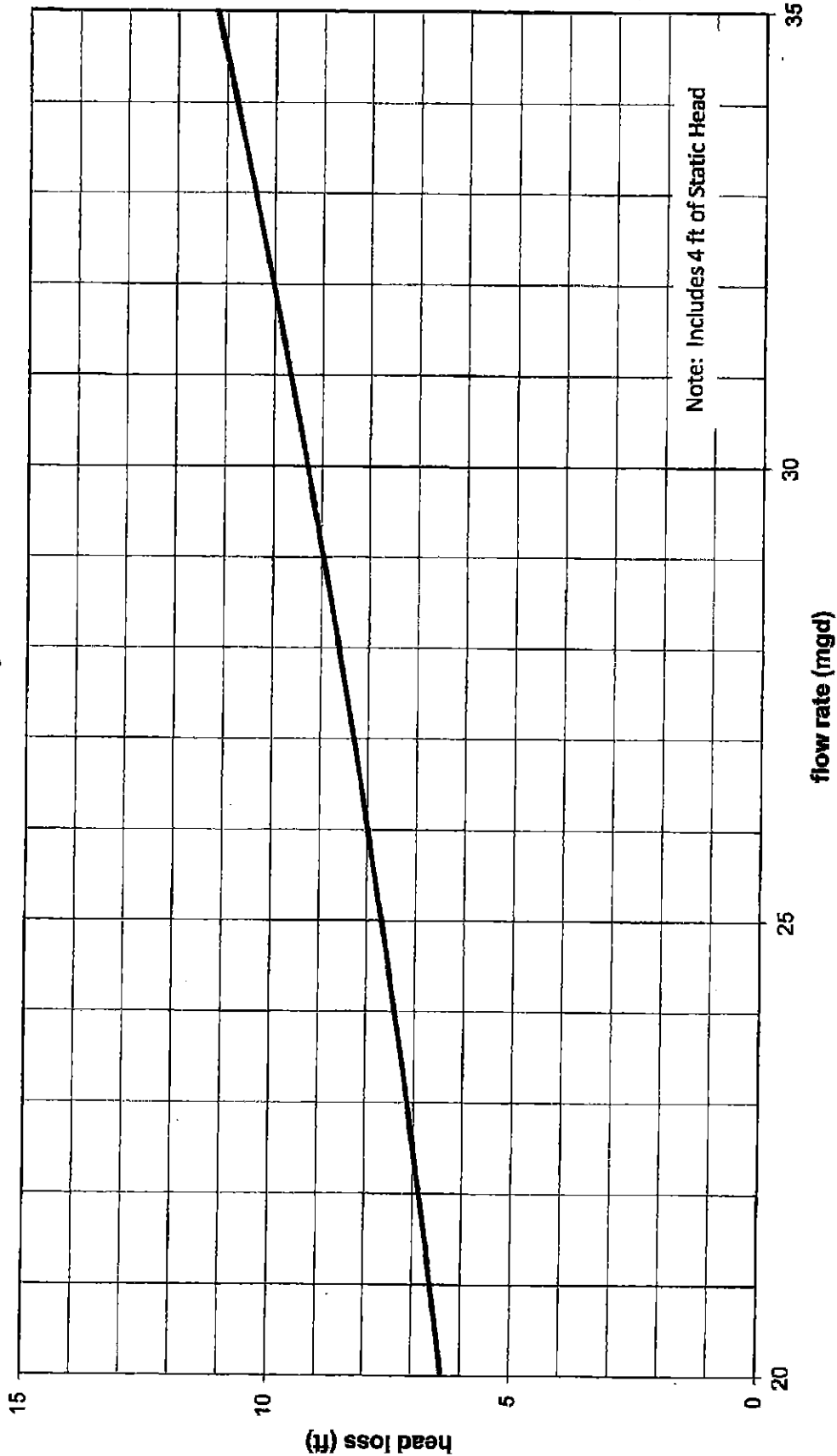
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PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



**NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.**

### Intake System Individual Pipeline System Curve



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FIGURE 6

INTAKE SYSTEM CURVE  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034

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DATE 03-11-15

SEAL

*[Signature]*

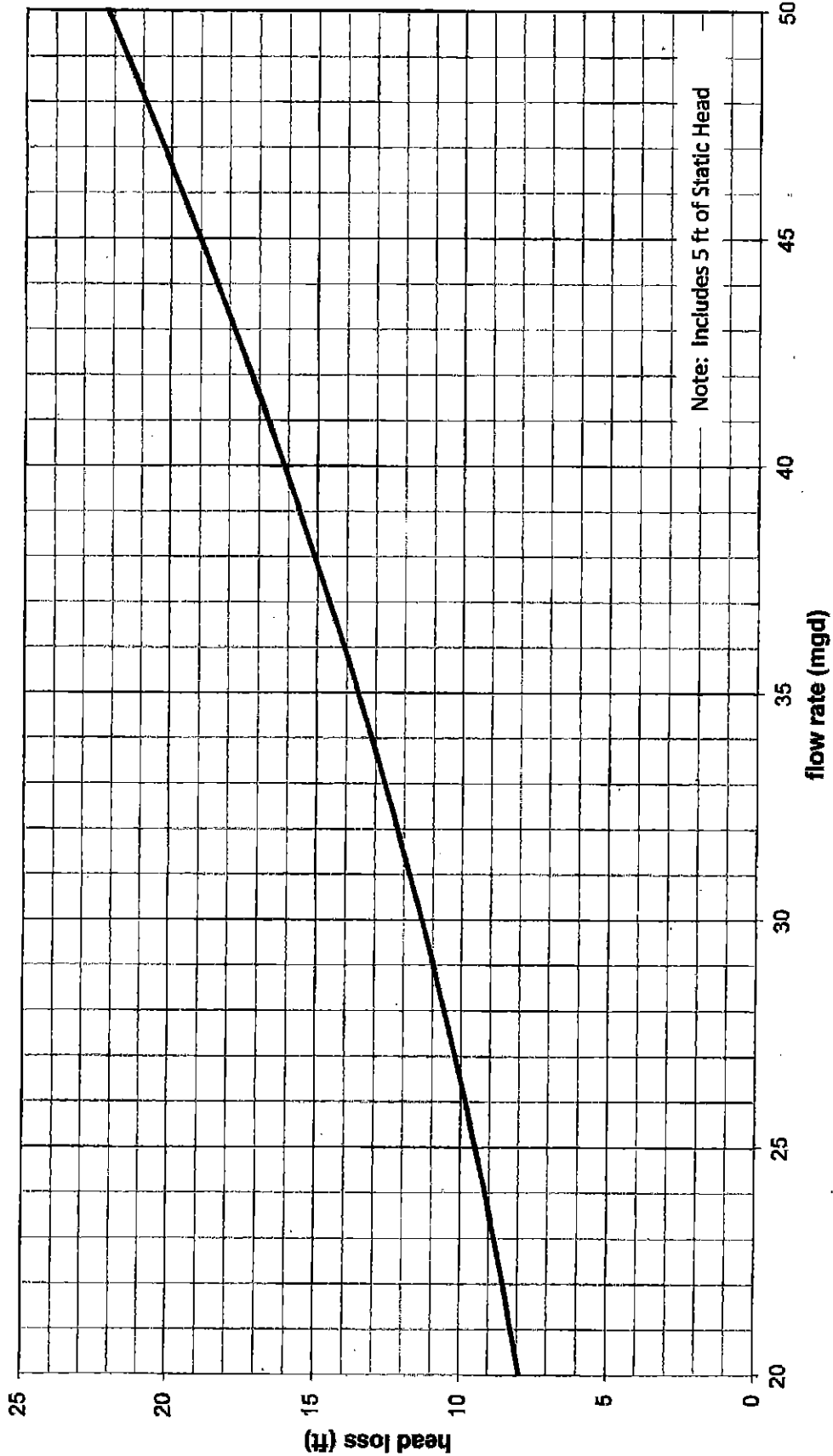
3/23/2015

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NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

### Discharge System Individual Pipeline System Curve



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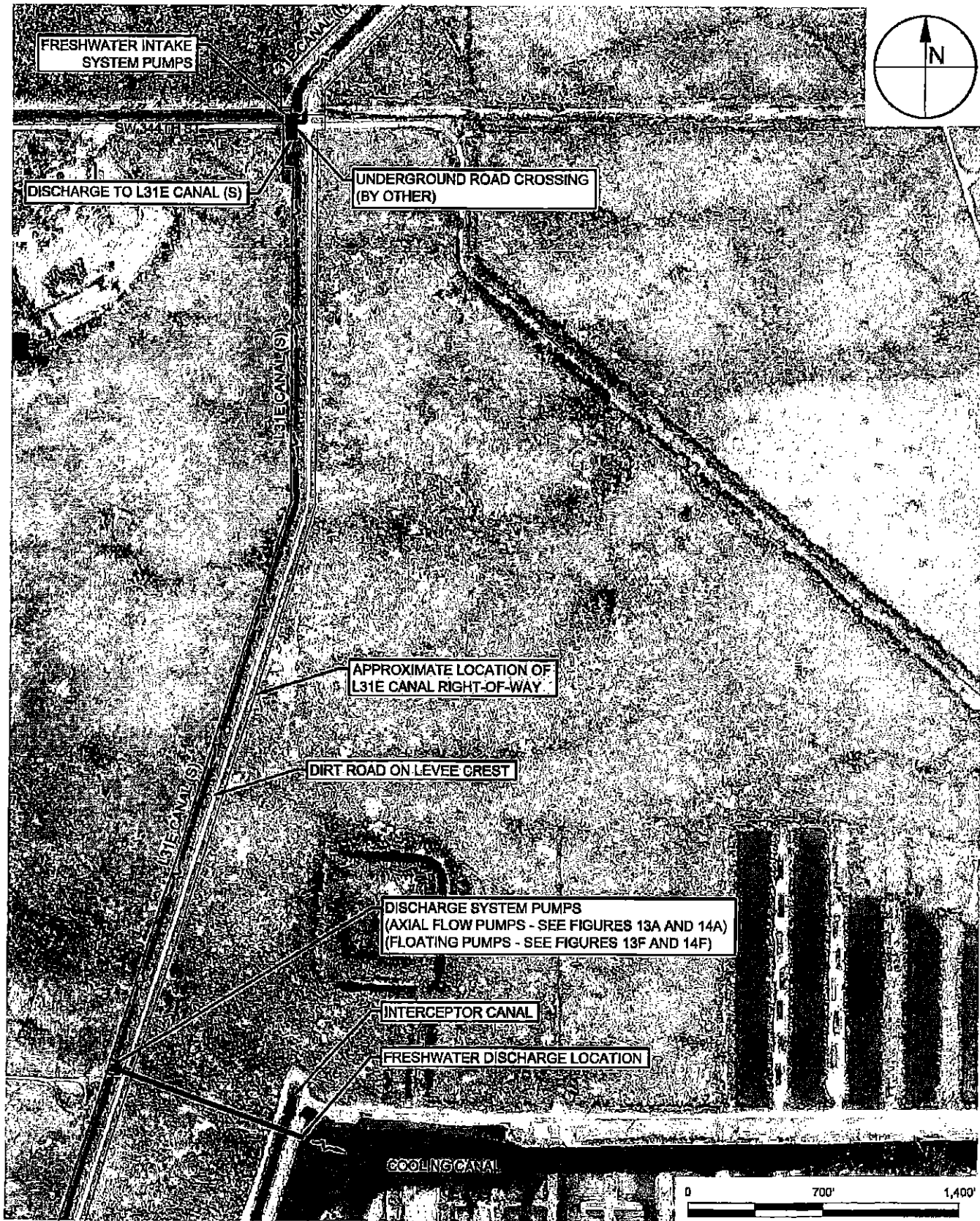
FIGURE 7  
DISCHARGE SYSTEM CURVE  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034  
DRAWN BY GAS  
SHEET 7 of 23  
DATE 03-11-15

DATE 3/23/2015  
MICHAEL P. WHELAN P.E. 55462

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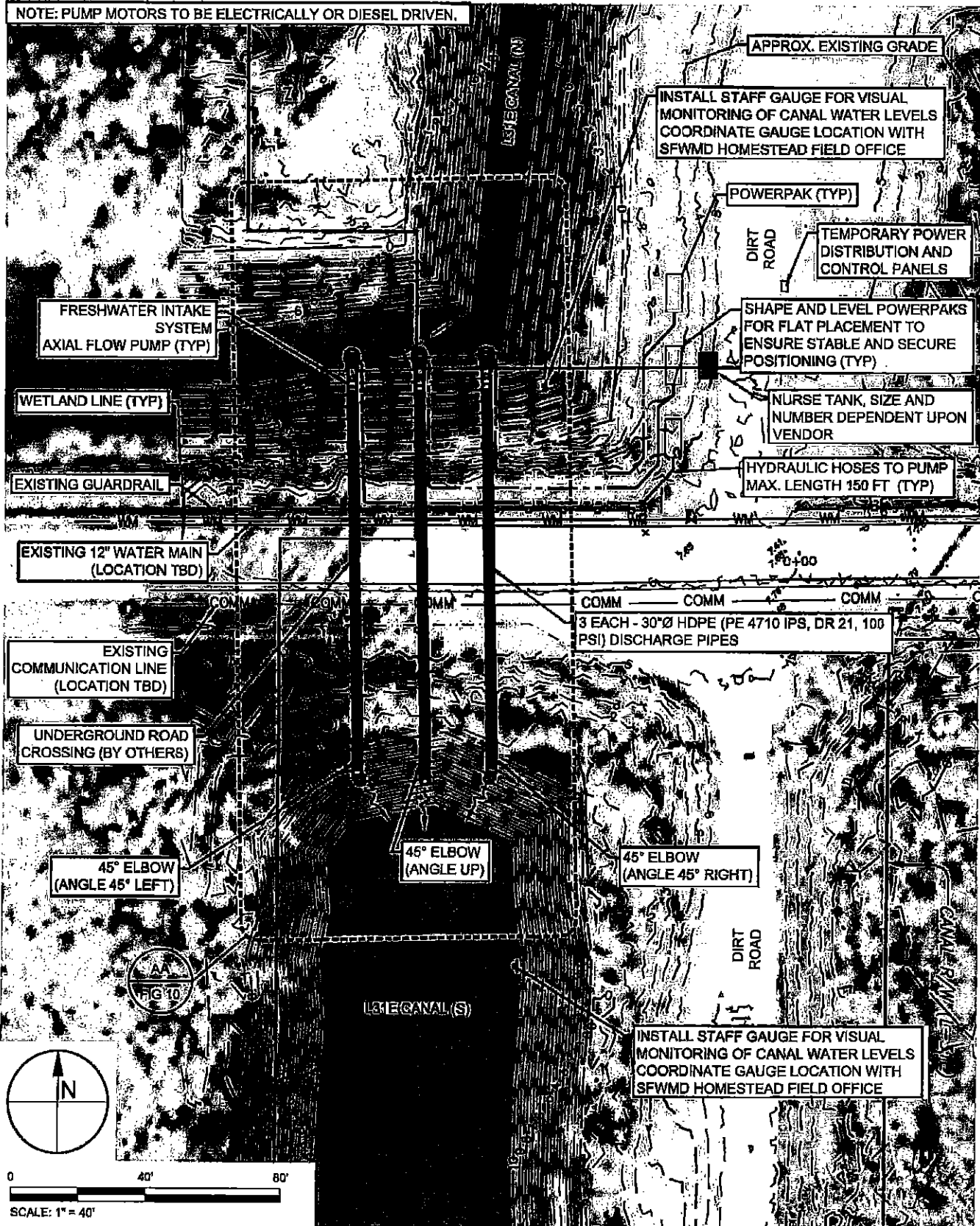


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**FIGURE 8**  
**PROJECT OVERVIEW**  
**FPL TURKEY POINT COOLING CANAL FRESHWATER**  
**DISCHARGE**  
**MIAMI-DADE COUNTY, FLORIDA**  
PROJECT: P2015-034 DRAWN BY: CAS SHEET: 8 of 23 DATE: 03-11-15

SEAL  
*[Signature]* 8/23/2015  
MICHAEL P. WHELAN P.E. # 55496 DATE

NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.



0 40' 80'  
SCALE: 1" = 40'



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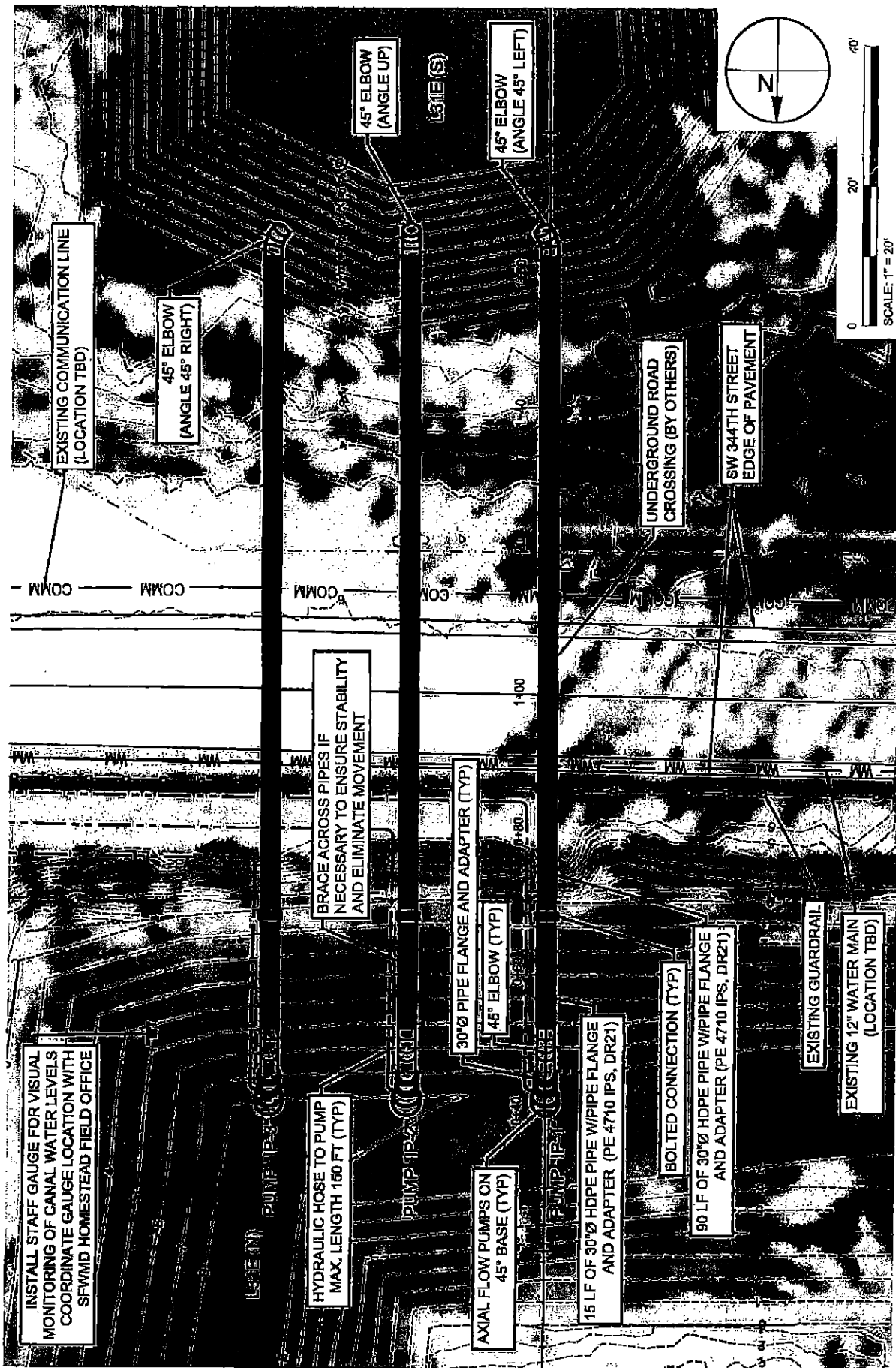
**FIGURE 9**  
**INTAKE SYSTEM SITE PLAN**  
**FPL TURKEY POINT COOLING CANAL FRESHWATER**  
**DISCHARGE**  
**MIAMI-DADE COUNTY, FLORIDA**

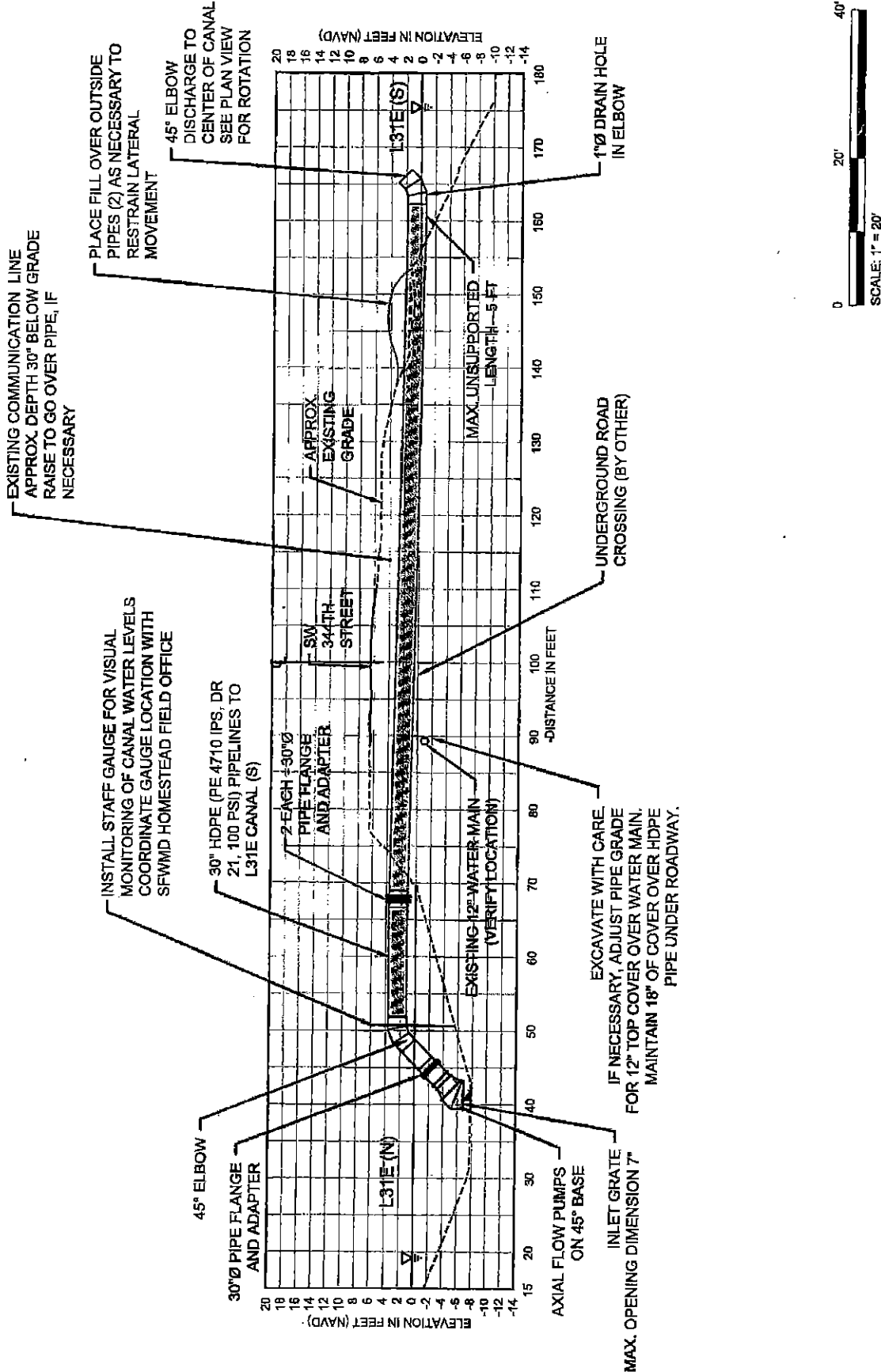
PROJECT	P2015-034	DRAWN BY	CAS	SHEET	8 of 23	DATE	03-11-15
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*Michael P. Whelan*  
3/23/2015  
MICHAEL P. WHELAN P.E. # 25408

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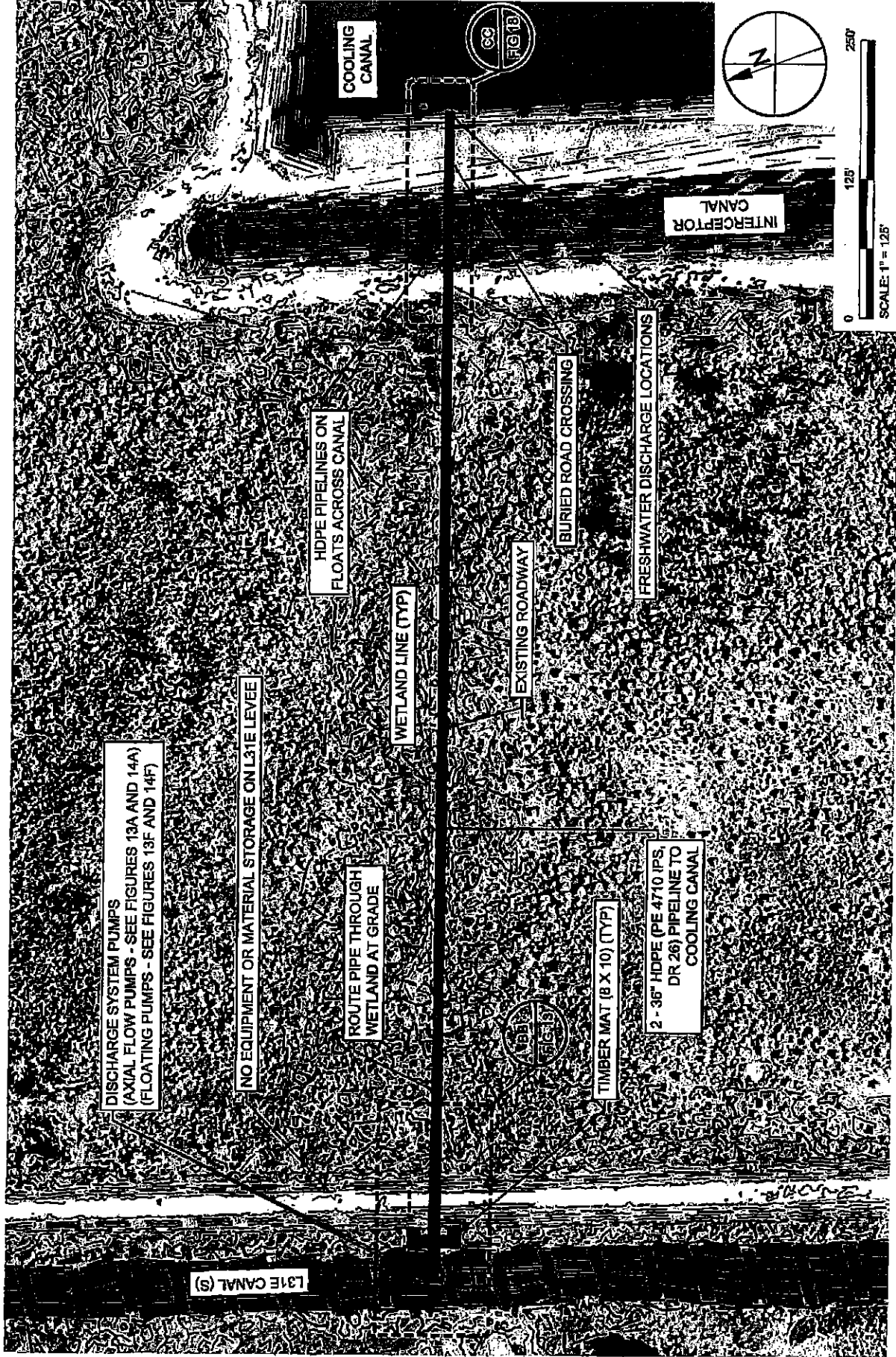
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CERTIFICATE OF AUTHORIZATION # 4316

**FIGURE 11**  
INTAKE SYSTEM PUMP AND UNDER ROAD CROSSING PROFILE  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
DRAWN BY: CAS  
SHEET: 11 of 23  
DATE: 03-11-15

SEAL: *[Signature]* 3/24/2015  
MICHAEL P. WELBY, P.E. 15442  
DATE

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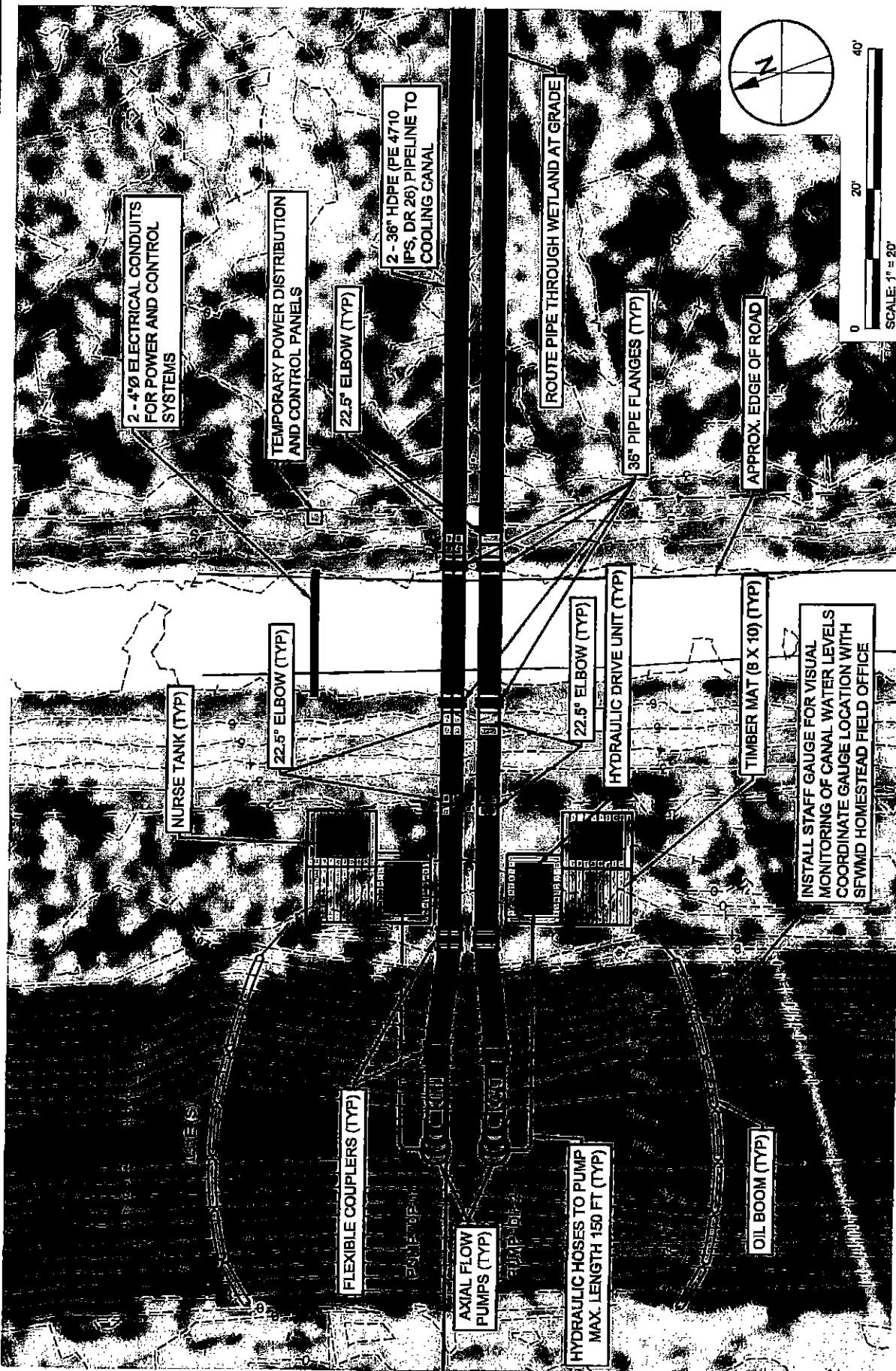
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**FIGURE 12**  
**DISCHARGE SYSTEM SITE PLAN**  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	DATE	03-11-15
DRAWN BY	CASH	SHEET	12 of 23
DATE			

*Michael P. Whelan* 3/23/2015  
MICHAEL P. WHELAN P.E. 55608

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**FIGURE 13A**  
DISCHARGE SYSTEM AND LEVEE CROSSING PLAN  
AXIAL FLOW PUMPS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

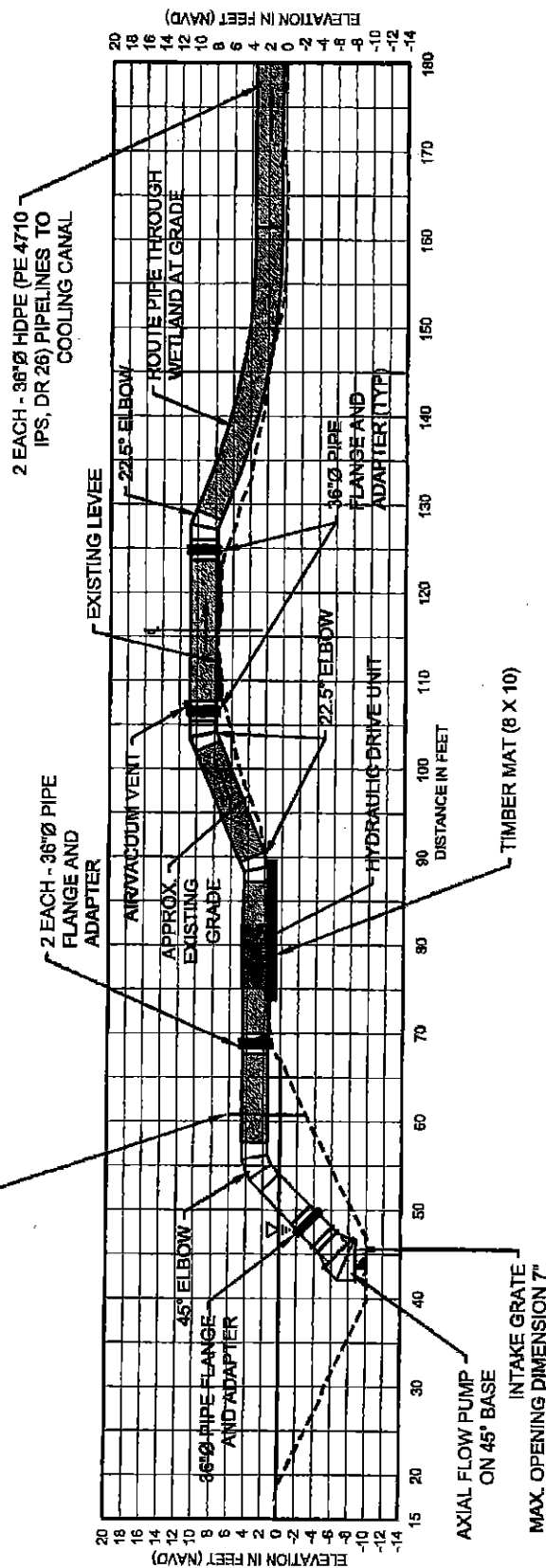
PROJECT	P2015-034	SCALE	3/23/2015
DRAWN BY	CAS		
SHEET	13 of 23		
DATE	03-11-15		

MICHAEL P. WHELAN P.E. 35960

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INSTALL STAFF GAUGE FOR VISUAL MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH SFWRD HOMESTEAD FIELD OFFICE

**TO COOLING CANAL**



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FIGURE 14A  
DISCHARGE SYSTEM AND LEVEE CROSSING PROFILE  
AXIAL FLOW PUMPS  
FPFL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

**PROJECT**  
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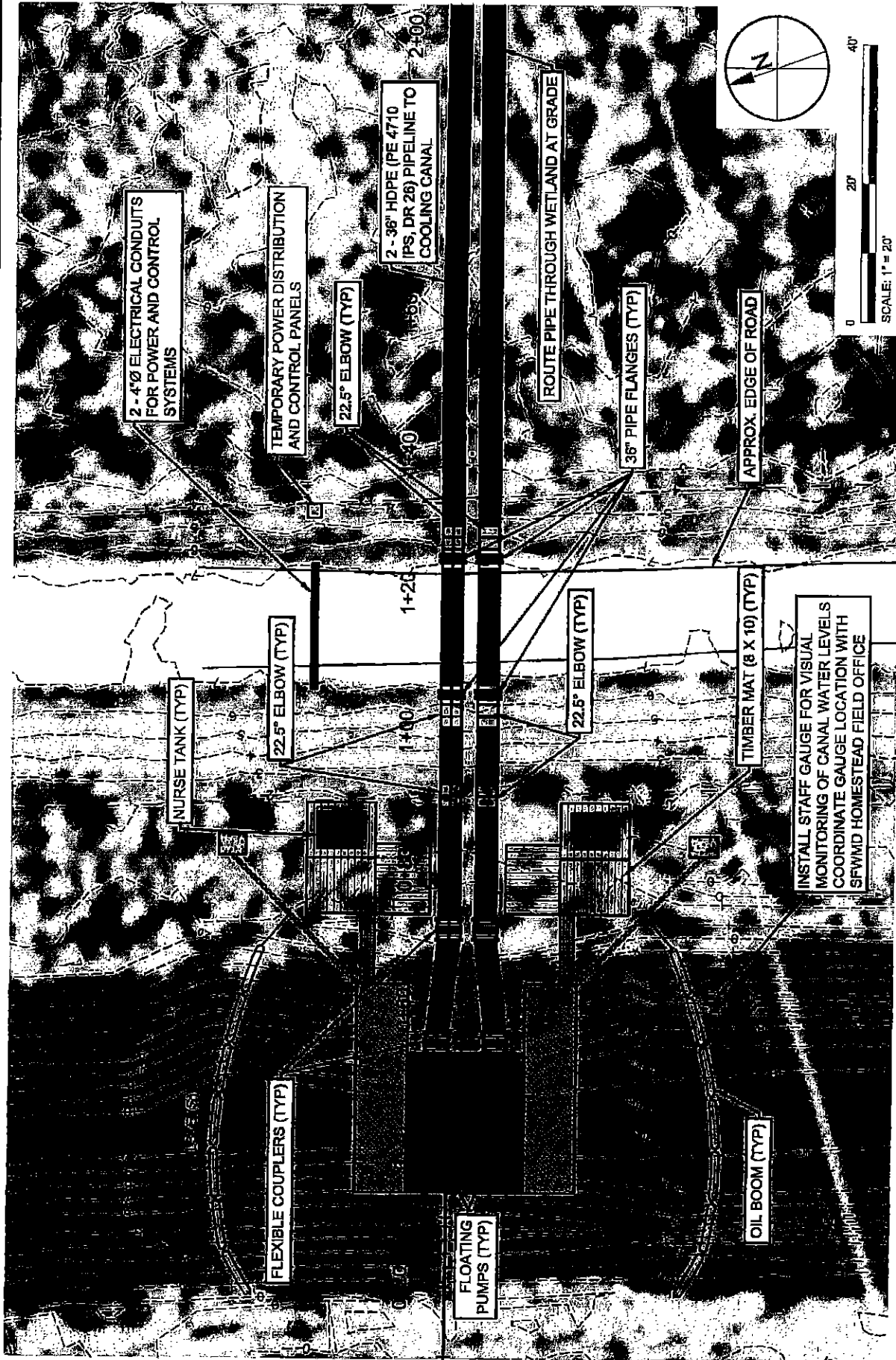
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**FIGURE 13F**  
 DISCHARGE SYSTEM AND LEVEE CROSSING PLAN  
 FLOATING PUMPS  
 FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
 MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SEAL	
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SHEET	15 of 23	DATE	03-11-15
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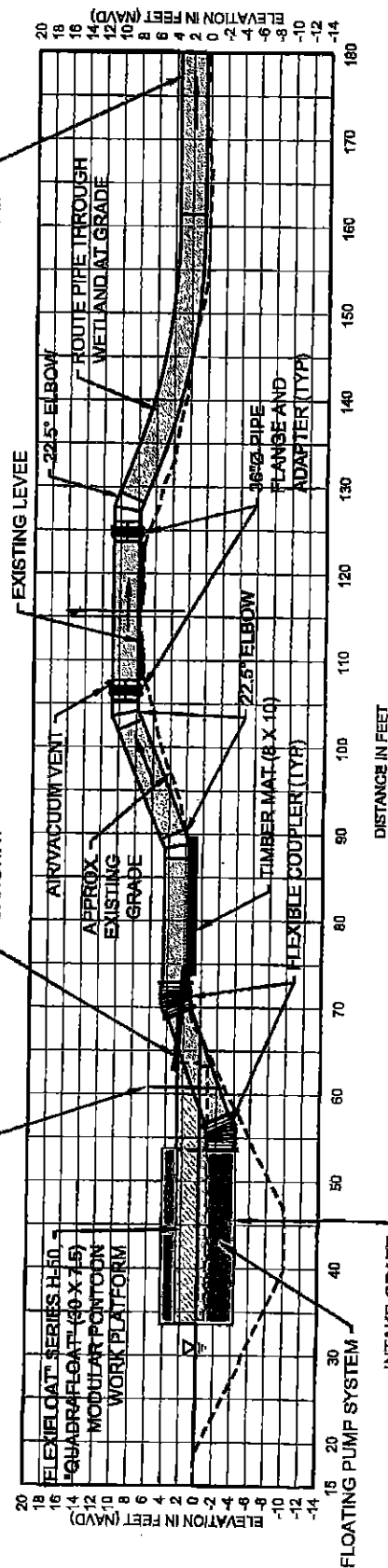
NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SFWMD HOMESTEAD FIELD OFFICE

TO COOLING CANAL

2 EACH - 36"Ø HDPE (PE 4710 -  
IPS, DR 26) PIPELINES TO  
COOLING CANAL

PUMP ACCESS  
GANGWAY



DISTANCE IN FEET

FLOATING PUMP SYSTEM

INTAKE GRATE  
MAX. OPENING DIMENSION 7"



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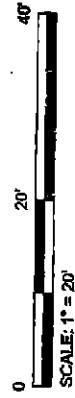
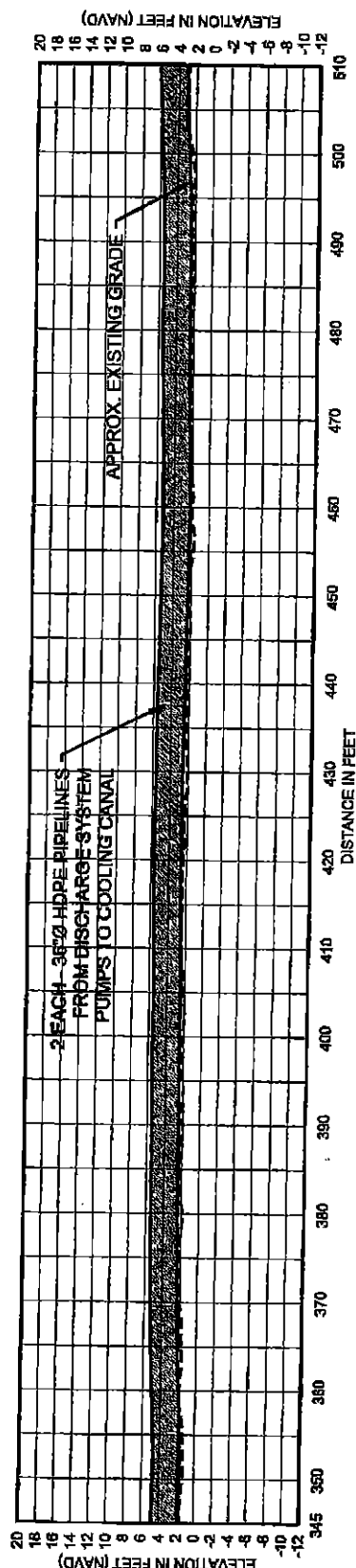
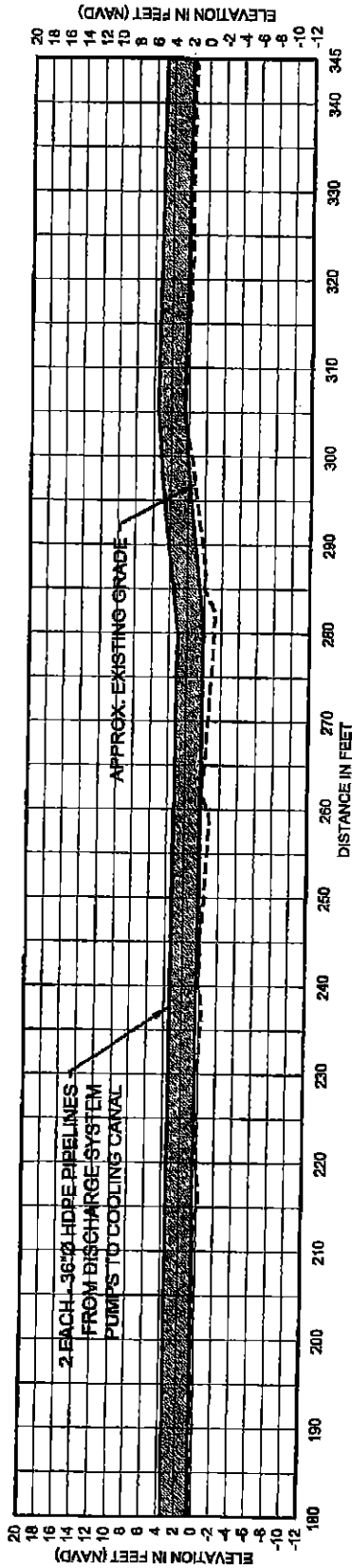
FIGURE 14F  
DISCHARGE SYSTEM AND LEVEE CROSSING PROFILE  
FLOATING PUMPS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034  
DRAWN BY CAS  
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DATE 03-11-15

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*Michael P. Wrean*  
MICHAEL P. WREAN P.E. 35994  
DATE 3/23/15

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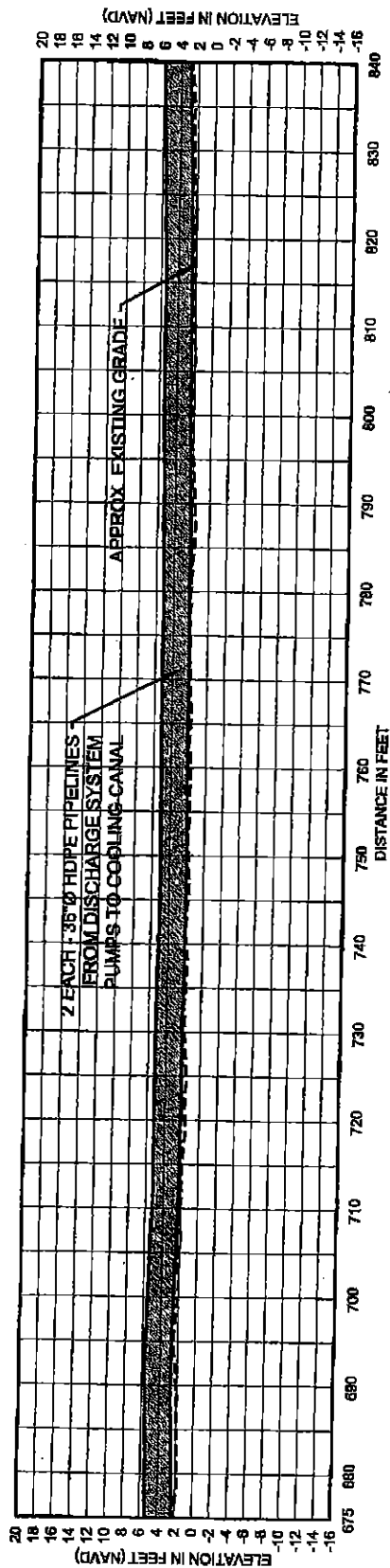
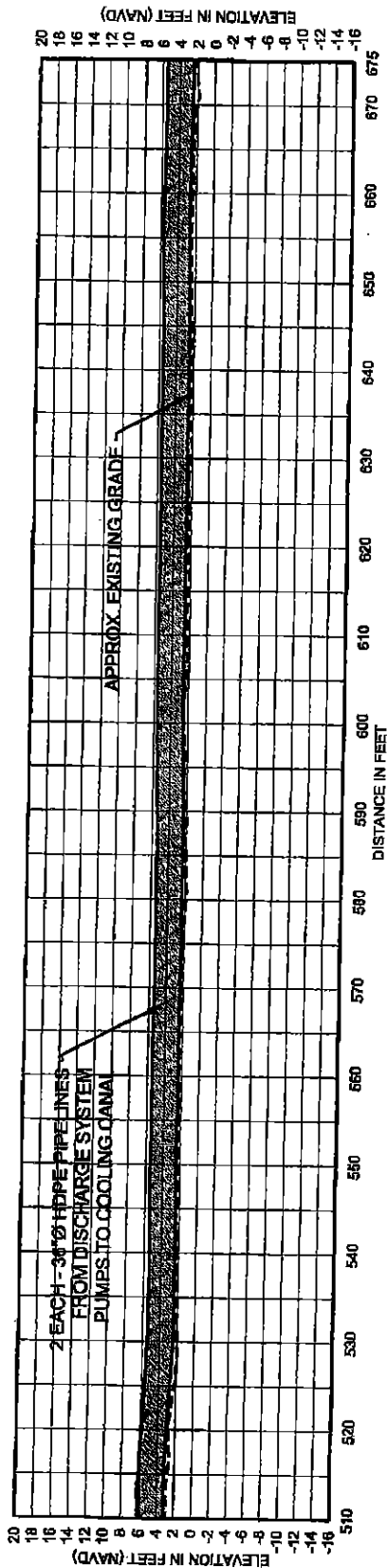
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CERTIFICATE OF AUTHORIZATION # 4815

**FIGURE 15**  
**DISCHARGE SYSTEM PROFILES**  
 STA. 1+80 THRU 5+10  
**FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE**  
 MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SEAL	
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DATE	03-11-15		

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0 20' 40'  
SCALE: 1" = 20'

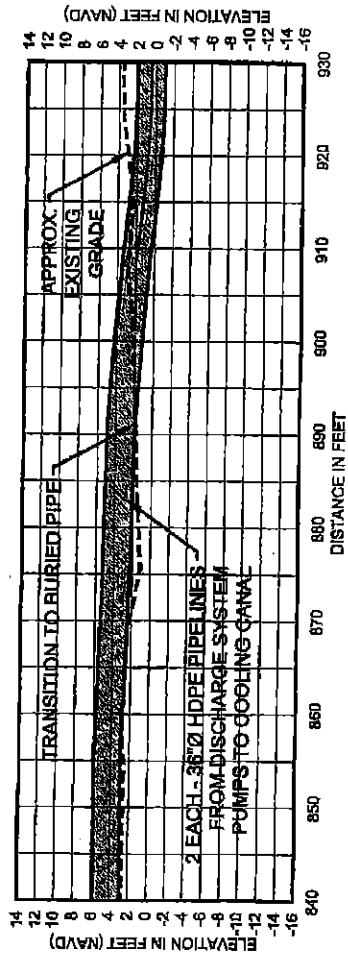
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JACKSONVILLE, FL 32256  
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**FIGURE 16**  
**DISCHARGE SYSTEM PROFILES**  
**STA. 5+10 THRU 8+40**  
**FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE**  
**MIAMI-DADE COUNTY, FLORIDA**

PROJECT	P2015-034
DRAWN BY	CAS
SHEET	18 of 23
DATE	03-11-15

*Michael P. Winkler*  
3/23/2015  
DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



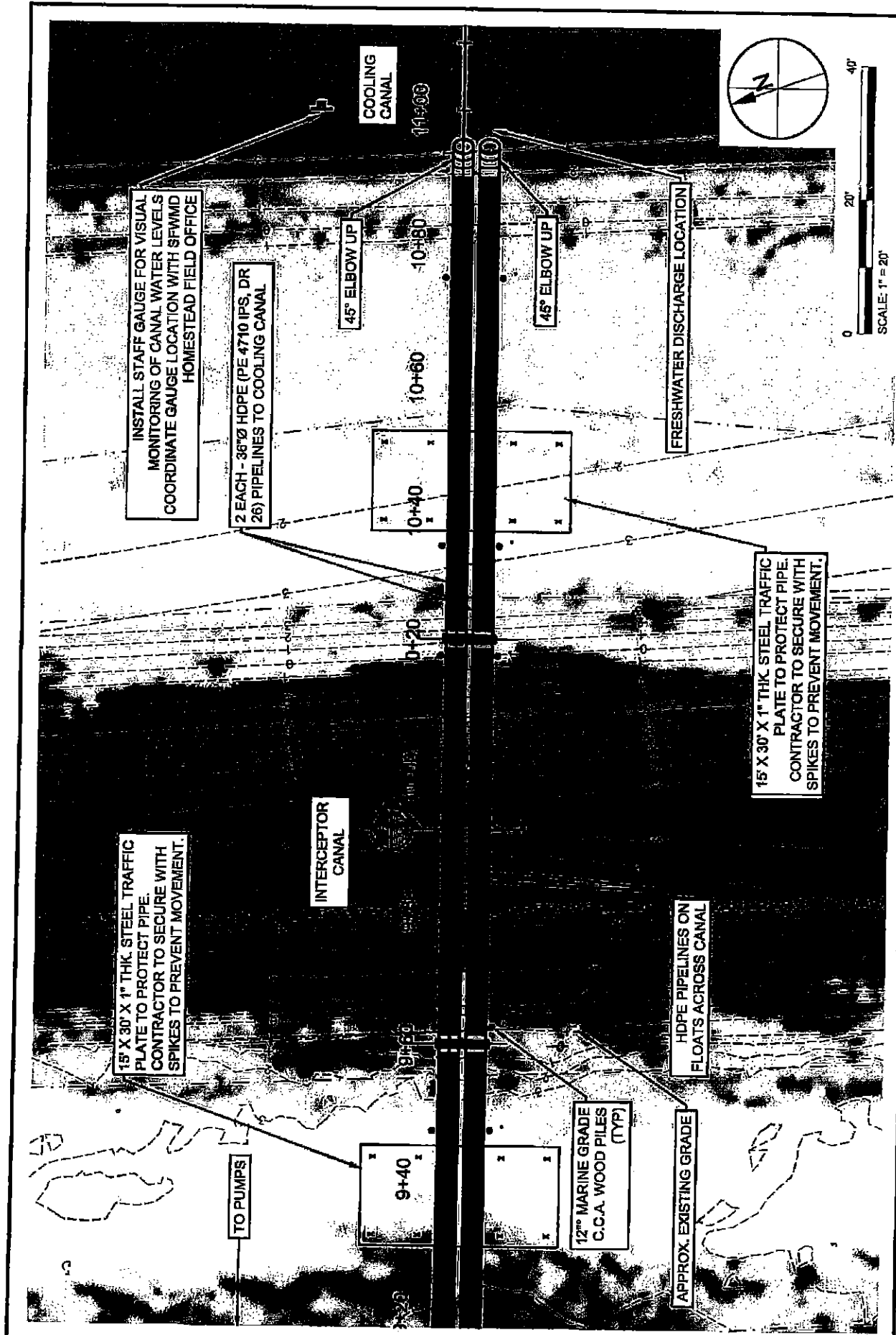
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**FIGURE 17**  
**DISCHARGE SYSTEM PROFILES**  
 STA. 8+40 THRU 9+30  
 FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
 MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034  
 DRAWN BY CAS  
 SHEET 19 of 23  
 DATE 03-11-15

*Michael P. Whelan*  
 MICHAEL P. WHELAN P.E. & S.A.B.C.  
 DATE 2/23/2015

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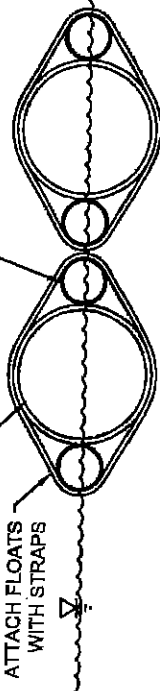
FIGURE 18  
DISCHARGE SYSTEM PLAN AT INTERCEPTOR CANAL  
PIPE CROSSING OVER INTERCEPTOR CANAL  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SCALE	1" = 20'
DRAWN BY	CAS	SHEET	20 of 23
DATE	03-11-15	DATE	03-11-15

*Michael P. Wheat* 3/23/2015  
MICHAEL P. WHEAT, P.E. 3085

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36" HDPE PIPE (TYP)  
ATTACH FLOATS WITH STRAPS



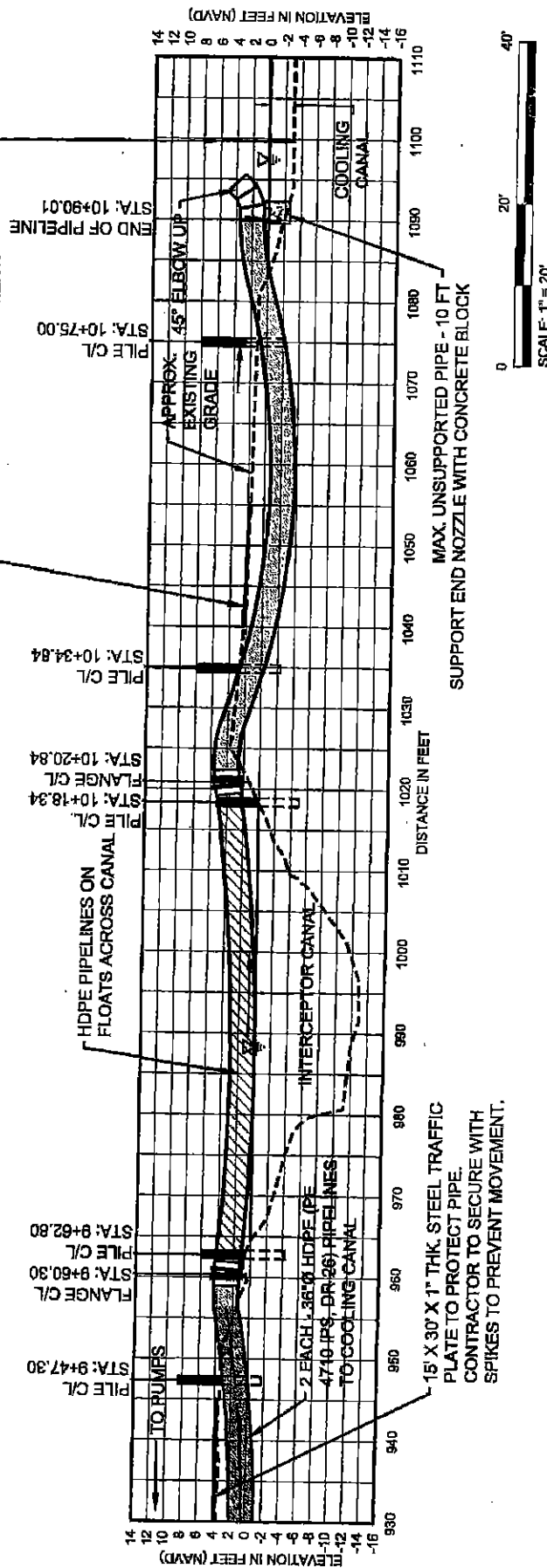
NOTE:  
READY MADE COMMERCIAL FLOATS MAY BE  
SUBSTITUTED FOR FLOATS SHOWN.

## PIPE FLOAT DETAIL AT INTERCEPTOR CANAL

NOT TO SCALE

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SFWMD HOMESTEAD FIELD OFFICE

15' X 30' X 1" THK. STEEL TRAFFIC  
PLATE TO PROTECT PIPE.  
CONTRACTOR TO SECURE WITH  
SPIKES TO PREVENT MOVEMENT.



**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 4615

FIGURE 19  
DISCHARGE SYSTEM PROFILE AT INTERCEPTOR CANAL  
PIPE CROSSING OVER INTERCEPTOR CANAL  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
DRAWN BY: CAS  
SHEET: 21 of 23  
DATE: 03-11-15

*Michael P. Morgan, P.E.*  
DATE: 3/23/2015

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



EROSION CONTROL AND GRASSING/SEEDING NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN EROSION CONTROL MEASURES AS NECESSARY TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND COMPLY WITH STATE WATER QUALITY CRITERIA FOR STORMWATER DISCHARGE. EROSION CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO TURBIDITY SCREENS, MULCHING, HAY BALES, AND SILT FENCE. IF A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSTRUCTION COSTS, AND FINES.
2. DISTURBED AREAS SHALL BE MAINTAINED IN ACCORDANCE WITH CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING PERMANENT VEGETATION AT ALL DISTURBED AREAS PER DRAWINGS AND MEETING THE NPDES FINAL STABILIZATION REQUIREMENTS.
4. EROSION CONTROL MEASURES SHALL BE MAINTAINED FOR THE ENTIRE DURATION OF THE PROJECT OR UNTIL VEGETATION IS ESTABLISHED.
5. EROSION CONTROL MEASURES SHALL BE PLACED TO CONTAIN ALL POINTS OF DISCHARGE TO SURFACE WATERS OR WETLANDS INCLUDING SURFACE RUNOFF, CURB INLETS, DITCH BOTTOM INLETS, DITCHES, AND DOWNSTREAM PORTIONS OF STREAMS, CANALS, AND TIDAL WATERS ADJACENT TO CONSTRUCTION.
6. 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS.
7. THE CONTRACTOR SHALL WRAP STORM GRATES IN FILTER FABRIC TO PREVENT SEDIMENTATION OF THE STORM SEWER SYSTEM. CONTRACTOR SHALL MAINTAIN THE FILTER FABRIC UNTIL PROJECT COMPLETION.
8. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
9. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION #4615

FIGURE 21  
EROSION CONTROL NOTES  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SEAL
DRAWN BY	CAS	
SHEET	23 of 23	
DATE	03-11-15	

*Michael P. Whelan*  
MICHAEL P. WHELAN P.E. #5548  
DATE 3/23/2015

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

**Attachment C**  
**Zoning Memorandum**

# Memorandum



**Date:** May 5, 2015

**To:** Lisa Spadafina, Chief *LS*  
Natural Resources Division  
Department of Regulatory and Economic Resources

**From:** Christine Hopps, ERPS *CH*  
Coastal and Wetlands Resources Section  
Department of Regulatory and Economic Resources

**Subject:** Request to Modify Class I Permit CLI-2014-0312 by Florida Power and Light Company for Additional Short-Term Temporary Impacts to 0.24 Acres of Halophytic Wetlands at the Properties Identified by Folio Numbers 30-7029-001-0011, 30-7290-000-0010, and 30-7029-001-0012, Miami-Dade County, Florida

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Pursuant to Section 24-48.2(II)(B)(7), of the Code of Miami-Dade County, Florida, a substantiating letter was submitted stating that the proposed project does not violate any zoning laws. Said letter was submitted prior to approval by the Miami-Dade County Board of County Commissioners and prior to issuance of the Class I permit.

**Attachment D**

**Final Order Issued to Florida Power and Light Company by the  
South Florida Water Management District (SFWMD No. 2015-020-  
DAO-WU)**

BEFORE THE GOVERNING BOARD OF THE  
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

RECEIVED  
CLERK'S OFFICE

APR 10 2015 10:10 AM

SFWMD No. 2015-020-DAO-WU

RECEIVED  
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

In re:

AUTHORIZATION OF SHORT-TERM  
WATER WITHDRAWALS BY FLORIDA  
POWER AND LIGHT FROM THE  
L-31E CANAL SYSTEM IN MIAMI-DADE  
COUNTY, FLORIDA

**FINAL ORDER**

The Governing Board of the South Florida Water Management District ("District"), pursuant to Sections 373.083, 373.085, 373.086, and 373.171, Florida Statutes (Fla. Stat.), after considering the recommendations of District staff and being otherwise fully appraised of the matter, issues the following Final Order containing Findings of Fact, Ultimate Facts and Conclusions of Law:

**FINDINGS OF FACT**

1. The District is a public corporation of the State of Florida, existing pursuant to Chapter 25270, Laws of Florida, 1949, and operating pursuant to Chapter 373, Fla. Stat., and Title 40E, Florida Administrative Code ("Fla. Admin. Code"), as a multi-purpose water management district with its principal office at 3301 Gun Club Road, West Palm Beach, Florida. The District has the power and duty to protect Florida's water resources and to administer and enforce the provisions of Chapter 373, Fla. Stat., and the rules promulgated there under, Title 40E, Fla. Admin. Code. The District has jurisdiction over the matters addressed in this Order.

2. Florida Power and Light ("FPL") is a subsidiary of NextEra Energy, Inc. As a regulated utility, FPL is granted an exclusive franchise by the Public Service Commission to provide reliable and cost-effective electric service to customers, including critical infrastructure, within its service territory in Florida. FPL's service territory covers all or parts of 35 Florida counties and serves approximately nine million customers.

3. The customers particularly at issue in this matter are those residing in Miami-Dade and Broward counties. In these counties, FPL provides electrical service to two million customer accounts, including critical infrastructure.

4. FPL owns and operates the electric power generating facility known as the Turkey Point Power Plant ("Turkey Point") that is the subject of this request.

5. Turkey Point is located in unincorporated southeast Miami-Dade County, east of Florida City and the City of Homestead. The Turkey Point site covers approximately 11,000 acres. Turkey Point is located approximately 25 miles south of Miami and about nine miles east of Florida City. Properties adjacent to the facility are almost exclusively undeveloped land. Turkey Point is bordered to the east by Biscayne Bay, Biscayne National Park, and Card Sound. A Turkey Point location map is attached hereto as Exhibit A.

6. Turkey Point consists of five steam electric generating units: three fossil fuel-fired units (Units 1, 2, and 5) and two nuclear units (Units 3 and 4). Units 1 and 2 constructed in the late 1960s each have a continuous generating capacity of approximately 404 megawatts (MW). Operations of units 1 and 2 are on a standby basis and not routinely in service. Unit 5 has a continuous generating capacity of

approximately 1150 MW. Units 3 and 4 each have continuous generating capacity of approximately 820 MW.

7. Units 3, 4, and 5 are certified under Florida's Power Plant Siting Act ("PPSA"). Units 1 and 2 pre-date the PPSA and are not certified.

8. FPL owns and operates a cooling canal system ("CCS"), an approximately 5,900-acre network of unlined canals at Turkey Point, to provide cooling water. Construction of the CCS was completed in 1973. The CCS is closed from the surface waters of both Biscayne Bay and Card Sound. The CCS facilities pre-date the PPSA and are not certified. Under routine operations, there are no active surface water inflows utilized to maintain CCS water levels, temperature, or salinity.

9. The L-31E Canal System is of particular importance to FPL's request. The L-31E Canal System is part of the Central and Southern Florida Flood Control Project ("C&SF Project") for which the District is the designated local sponsor pursuant to Section 373.1501, Fla. Stat. As local sponsor, the District operates C&SF Project components, including the L-31E Canal system and the surface water flow to tide from the associated basins, consistent with the guidance provided in the United States Army Corps of Engineers Master Water Control Manual, East Coast Canals, Volume 5.

10. The L-31E Canal System is a borrow canal and levee system that stretches north – south, intercepting water as it flows eastward to tide in southeast Dade County and providing storm surge protection. A map depicting the L-31E Canal System is attached hereto as Exhibit B. The L-31E Canal runs parallel to the South Central Biscayne Bay and across several drainage basins, six of which are named for the associated major east-west canals: Canal 100 (C-100), C-1, C-102, C-103, North Canal

and Florida City Canal. This canal network and coastal levee system is operated for several C&SF Project purposes, including reducing the potential for flood and storm surge damage as well as limiting saline water intrusion. Water from the L-31E is discharged to Biscayne Bay at several coastal structures as depicted on Exhibit B.

11. Operation of the C&SF Project coastal structure gates in this canal network discharge excess water when rainfall causes stages to rise above the control levels and close in order to maintain sufficient water to prevent salt water intrusion among other Project purposes. Overall, these surface water inflows comprise the largest input of fresh water to Biscayne Bay and Biscayne National Park in this area.

12. In the 1990's the U.S. Army Corps of Engineers and the District developed the Comprehensive Everglades Restoration Program ("CERP") which was approved by Congress in the Water Resources Development Act of 2000 ("WRDA 2000"). A component of CERP includes the Biscayne Bay Coastal Wetlands Phase 1 Project. This project component aims to restore the overland sheetflow in an area of up to 11,000 acres, and to improve the ecology of Biscayne Bay, including its freshwater and saltwater wetlands, nearshore bay habitat, marine nursery habitat, and the oyster reef community.

13. Implementation of the Biscayne Bay Coastal Wetlands Phase 1 Project will impound and redistribute freshwater runoff from the existing canal discharges into the coastal wetlands adjoining Biscayne Bay to provide a more natural and historical overland flow pattern through existing coastal wetlands and tidal creeks. This redistribution of freshwater runoff will improve the temporal and spatial distribution of inflows to Biscayne Bay.

14. The WRDA 2000 requires that water be reserved from allocation as an assurance that each CERP project component will meet its goals and objectives. Water is to be reserved consistent with the objectives and information contained within the *Central and Southern Florida Project Comprehensive Everglades Restoration Plan Biscayne Bay Coastal Wetlands Project Phase I Final Integrated Project Implementation Report and Environmental Impact Statement* ("PIR") and other sources of information.

15. To this end, the District conducted technical studies identifying water to be reserved for the protection of fish and wildlife within the western near-shore portion of Central Biscayne Bay, engaged in rule development, and adopted the Nearshore Central Biscayne Bay reservation rule and associated implementation rules. The reservation rules and consumptive use implementing criteria is attached hereto as Exhibit C. The location of the Nearshore Central Biscayne Bay and the associated Project canal system is depicted in Figure 3-1 of Exhibit C.

16. The determination of the amount of water needed for protection of fish and wildlife in the Nearshore Central Biscayne Bay reservation rule is based on meeting a year-round salinity target for the nearshore area of central Biscayne Bay of 20 (practical salinity scale) given in the PIR. More detailed analyses were performed to determine the locations and quantities of surface water for the reservation rules. This information is contained in the District's Technical Document to Support a Water Reservation Rule for the Comprehensive Everglades Restoration Plan Biscayne Bay Coastal Wetlands Project (July 2013).

17. Rule 40E-10.061, Fla. Admin. Code, is the water reservation rule for the Nearshore Central Biscayne Bay. Pursuant to this rule, a Target Flow to the Bay of 504

acre-feet per day, of surface water is reserved from allocation. Appendix 3, Figure 3-1 of Chapter 40E-10, Fla. Admin. Code, depicts the Nearshore Central Biscayne Bay Reservation Water Body and Protected Canal Reaches; Figures 3-4A and 3-4B depict surface water flow from the C-102 + Military + C-103 Canal through S-21A + S-20G + S-20F into Biscayne Bay during the wet and dry seasons. (Ex. C.)

18. Water levels in the L-31E Canal System, the proposed water supply source, are influenced by the operation of coastal canal structures. Operation of the S-20F, S-20G, and S-21A are performed consistent with guidance from the United States Army Corps of Engineers regulation schedule and Master Water Control Manual, East Coast Canals, Volume 5. Under normal operating conditions for April 30 – October 15 the S-20F, S-20G, and S-21A structures are operated in the “high range” meaning discharges to tide are conditionally made when stages upstream of the structure including stages within the L-31E Canal are 2.2 ft. NGVD or higher and the gates are closed when headwater stages drop to 1.8 ft. NGVD. During the agriculture drawdown season (October 15<sup>th</sup> through April 30<sup>th</sup>), S-21A, S-20G, and S-20F are set to operate with open and close ranges (Open/Close) of 1.4/1.0, 2.2/1.8, and 1.4/1.0 feet NGVD, respectively.

19. From 1993 to 2013, the District’s operational records show the combined average daily flow from the C-102, Military, and C-103 canals through Structures S-21A, S-20G, and S-20F, respectively, into this portion of Biscayne Bay are 987 acre-feet per day from May 1<sup>st</sup> to October 14<sup>th</sup>, with daily combined flows ranging from 0 acre-feet per day to more than 5,500 acre-feet per day during these months. From 1993 to 2013, the District’s operational records show the combined average daily flow from the C-102,

Military, and C-103 canals through Structures S-21A, S-20G, and S-20F, respectively, into this portion of Biscayne Bay are 492 acre-feet per day from October 15<sup>th</sup> to April 30<sup>th</sup>, with daily combined flows ranging from 0 acre-feet per day to more than 3,500 acre-feet per day during these months.

20. The combined reserved target flow for structures S-21A, S-20G, and S-20F is 504 acre feet suggesting that there is a reasonable expectation that daily flows exceeding the reservation target flows will occur during the months of June through mid-October, and potentially even through the month of November if conservative operational criteria for identifying and quantifying the amount of excess water are used.

21. Beginning in late spring, water temperatures within the CCS usually rise with temperatures at the plant intake often approaching 100°F by late spring. FPL's operating license from the Nuclear Regulatory Commission ("NRC") includes a requirement prohibiting the intake side of Units 3 & 4 from exceeding 104°F.

22. In order to prevent Units 3 & 4 from being required to shut down, thereby impacting grid reliability, FPL requested authorization from the District to use water from the L-31E Canal System to reduce the salinity and temperature of the water within the CCS. After consideration of water resource constraints, such as the Nearshore Central Biscayne Bay water reservation, the District issued an Emergency Order authorizing the withdrawal of water from the L-31E Canal System above what is needed to meet the reservation subject to various identified conditions, including an operational protocol. The Emergency Order was issued on August 28, 2014. The Governing Board concurred with the Executive Director's Emergency Order on September 11, 2014. The fall 2014 Emergency Order terminated on October 15, 2014.

23. Pursuant to the limitations defined in the Fall 2014 Emergency Order, FPL pumped a limited number of days and volumes. These withdrawals, when allowed, ranged from 1 to 103 million gallons per day ("mgd"). FPL withdrew a total of 1,135 million gallons ("mg") of water pursuant to the Fall 2014 Emergency Order. During the same time the fall 2014 Emergency Order was in effect and FPL was authorized to pump, the District also released a combined average flow of 601 acre-feet per day of freshwater to Biscayne Bay through S-21A, S-20G, and S-20F, or 97 acre-feet per day above the target reservation flow.

24. During the term of the Fall 2014 Emergency Order, the temperature of the water in the CCS dropped 3.5°F. The salinity of the water within the CCS also dropped from 87.4 parts per thousand ("ppt") to 75.4 ppt. There is a strong correlation between the drop in CCS water temperature and salinity from the addition of surface water.

25. FPL submitted an application to modify its site certification, requesting, in part, authorization to construct additional wells into the Floridan aquifer system ("FAS") and authorization to withdraw 14 mgd from said wells in order to provide water to the CCS. The District understands that the FAS is FPL's intended long-term solution to reduce temperatures and salinity of the water within the CCS.

26. The Florida Department of Environmental Protection ("FDEP") received several objections to FPL's request. (DOAH Case No. 15-1559). A hearing date certain has been set for July 13-17, 2015. As such, the objections and final agency action on FPL's request has not yet been determined.

27. As a temporary, interim step, FPL seeks this authorization to provide water to cool water in the CCS and reduce salinity.

28. On January 28, 2015, FPL submitted a consumptive use permit application, seeking authorization to divert and use non-reserved water from the L-31E Canal System. The purpose of the diversion is to help reduce high temperature and salinities occurring in the water in the CCS.

29. Specifically, FPL seeks to divert surface water that is available, above the water reserved by Rule 40E-10.061, Fla. Admin. Code, which would otherwise be discharged to Biscayne Bay via the S-20F, S-20G and S-21A coastal structures for the limited duration defined in this Order.

30. In support of their request, FPL provided a water/salt budget model for the Turkey Point CCS developed to quantify the volume of water and mass of salt entering and exiting the CCS over time and to evaluate changes in hydrodynamics associated with operational alternatives. A copy of the water/salt budget model is attached hereto as Exhibit D. The water/salt budget model ran two scenarios at multiple withdrawal rates. The first scenario simulated average weather conditions and the second scenario simulated drier than normal conditions. Each scenario was run four times under different pumping scenarios- no pumping, 30 mgd, 60 mgd, and 100 mgd and for a two (2) year timeframe. In each scenario, the results of the modeling showed that the greater the volume of water pumped into the CCS, the greater the drop in salinity of the water in the CCS.

31. As of March 24, 2015, the salinity of the water in the CCS was 85.76 ppt. The temperature of the water within the CCS was 90.45°F. These water temperatures are projected to increase during warm spring, summer, and fall months when air temperatures are high and daylight duration is at its height. The CCS water

temperatures become more manageable when cooler weather and shortened days occur during south Florida's winter and spring months.

32. District staff reviewed and considered FPL's request, historic data, District statutory authorizations and rules, and the potential water availability. District staff also met with representatives of FPL and other stakeholders to discuss this matter. Therefore, FPL has indicated its intent to withdraw application No. 150126-17, upon execution of this Order and expiration of the time to challenge the same.

#### **ULTIMATE FACTS AND CONCLUSIONS OF LAW**

33. The District is authorized to regulate connections and use of the District's rights of way, use of water, construction of new diversion facilities, initiation of new water uses, diversion and withdrawal facilities pursuant to a variety of statutes. (e.g.: §§373.083, 373.085, 373.086, 373.1501, 373.171, 373.219, Fla. Stat.)

34. The Governing Board may "[i]ssue orders to implement or enforce any provisions of th[e] chapter or regulations." § 373.083(2), Fla. Stat. (2014).

35. The Governing Board is authorized to issue orders affecting the use of water, as conditions warrant, and forbidding the construction of new diversion facilities or wells, the initiation of new water uses, or the modification of any existing uses, diversion facilities, or storage facilities within the affected area. § 373.171(1), Fla. Stat. (2014).

36. Pursuant to Sections 373.085, 373.086 and 373.1501, Fla. Stat., the District is authorized to act as local sponsor and operate the C&SF Project, including those structures that are part of the L-31E Canal System and relevant to the subject reservation.

37. Rule 40E-10.061, Fla. Admin. Code, reserves water for protection of fish and wildlife in the Nearshore Biscayne Bay. Seasonal target flows are stated in this rule. Operation of the C&SF Project frequently involves discharge of water from the subject structures to tide in excess of those reserved such that water is periodically available for use.

38. FPL's Turkey Point CCS has recently experienced heightened temperatures and salinity. The CCS temperatures, if sufficiently high, can result in an emergency involving potential to shutting down all or part of power production at Turkey Point.

39. Addition of water from an external source can reduce CCS temperatures.

40. To avoid an emergency and better manage heightened CCS temperatures and salinity, FPL seeks a short-term approval authorizing withdraw of available surface water from the L-31E Canal System as it develops long-term water supply and other options to manage CCS temperatures and salinity.

41. Based on FPL's request and the above-described facts, the District has considered this matter and finds that the requested use, as conditioned by the below stated withdrawal limitations and monitoring requirements, will not use water reserved for protection of fish and wildlife as defined in Rule 40E-10.061, Fla. Admin. Code, and will not cause to harm the water resources of the District.

#### **ORDER**

Based upon the Findings of Fact, Ultimate Facts and Conclusions of Law, the Governing Board orders that FPL is authorized to undertake the following, temporary actions in accordance with the conditions stated herein:

**42. Short-Term Water Withdrawal Authorization**

a. Water Availability Restriction: FPL is prohibited from withdrawing and using water from the L-31E Canal System that is reserved for fish and wildlife by Rule 40E-10.061, Fla. Admin. Code, for the Nearshore Central Biscayne Bay. The only water available for the purpose of this Order is that water which would otherwise be discharged to tide through the S-20F, S-20G, and S-21A structures and is sufficiently in excess of the flows reserved for protection of fish and wildlife in Rule 40E-10.061, Fla. Admin. Code. This available surface water may, for the duration of this Order, be withdrawn and used within FPL's cooling canal system in accordance with the conditions as set forth below. There are no assurances provided by this Order that water will be available for FPL's withdrawal and use on any given day. Water availability is determined by a two-step process: Step 1) satisfaction of the calendar constraint criteria; and Step 2) the delivery of 504 acre-feet per day to the Nearshore Central Biscayne Bay from S-21A, S-20G, and S-20F each day prior to the daily withdrawal of excess water from the C-103 Basin.

b. Step 1 - Calendar Constraint: FPL may potentially withdraw water from June 1 to November 30 ("Calendar Constraint"). No withdrawals are authorized from December 1<sup>st</sup> through May 31<sup>st</sup> by this Order.

c. Step 2 - Withdrawal of Excess Water from the L-31E Canal System: If the Calendar Constraint (Step 1) is met, the following procedure shall be used to identify when FPL can withdraw water from the L-31E Canal System:

i. Part 1 – All pumps start each day off.

ii. Part 2 – All pumps remain off until the combined discharge from S-21A, S-20G, and S-20F equals or exceeds 504 acre-feet. FPL shall monitor a data feed (i.e., web page) maintained by the District that provides real time estimates of the discharges from S-21A, S-20G, and S-20F. The data populating this site will be collected by the District SCADA system and communication in the normal time frames (e.g., updates ranging in frequency from 15 minutes to an hour).

iii. Part 3 – Once the data feed confirms that the combined discharge from S-21A, S-20G, and S20F equals or exceeds 504 acre-feet, FPL may withdraw water from the L-31E Canal System for the remainder of the day at up to the maximum capacity provided that the Criterion to Prevent Over-Withdrawal or Hydraulic Slope Impact is met.

iv. Part 4 – End of the Day. By the end of the Day (11:59 p.m.), FPL shall turn off all pumps. Once the pumps are secured for the day, FPL shall record the daily flow totalizer for each pump.

**43. Criterion to Prevent Over-Withdrawal or Hydraulic Slope Impact:** FPL shall maintain a volume within the L-31E that is sufficient to ensure that there is no net withdrawal based on the expected measurement uncertainty of the flow totalizers.

a. FPL shall calculate the daily volume pumped from the C-103 Basin into the L-31E as well as the daily volume pumped from the L-31E into the CCS. The volume of water pumped from the C-103 Basin into L-31E must exceed the daily volume pumped from the L-31E into the CCS. The difference in volume shall account for any calibration errors between the two flowmeters.

b. The pumps withdrawing water from the C-103 Basin and discharging into the L-31E Canal (North Pumps) shall always be started at least five minutes before the pumps withdrawing water from the L-31E and discharging into the CCS (South Pumps). At the close of pumping for the day, the South Pumps shall be stopped at least 5 minutes before the North Pumps. In addition to this proactive measure, FPL shall evaluate the stage response of the L-31E for drawdowns due to a net withdrawal or hydraulic slope or a combination of both and reduce the L-31E withdrawals as required to eliminate any drawdowns caused by FPL pumping.

44. **Communication of Water Availability Determination:** Data on the daily discharges from S-20F, S-21A, S-20G will be available on a web page for FPL to determine when it can pump excess water from the L-31E Canal System between June 1 and November 30 each calendar year. In the event the District's real-time or specific web page are inoperable on a given day or time period, FPL shall contact the District's Operation Control Center at: 561-682-6116 and [occ@sfwmd.gov](mailto:occ@sfwmd.gov) to report that the information is not updating so that the SFWMD can issue a remedy ticket to diagnose and correct the problem. FPL may not commence any daily withdrawal operations until the District's data feed is operable or FPL receives written (e.g., e-mail) approval to pump. The District will provide written approval only for extended (multi-day) outages of the data feed. FPL will be solely responsible for accessing the District's data and FPL own data (e.g., pumping rates) to perform the calculations required to assess the criteria and calculate the correct pumping rates and durations.

**45. Monitoring and Reporting:** FPL shall monitor and report the amount of water diverted from the L-31E Canal System to its cooling canal system on a weekly basis.

a. When FPL withdraws water, FPL shall generate a daily report that includes the following detailed information:

i. The water availability determination for each day based on the data from the District-provided web page;

ii. Identification of which pump(s) were used over the course of the day;

iii. The time on and time off, per pump;

iv. The RPM setting, per pump, if variable;

v. The calculated volume of water pumped, per pump; and,

vi. The cumulative log flows at each pump station.

vii. FPL shall collect temperature and salinity data prior to initiation of pumping pursuant to this Order and once a week thereafter for the duration of this Order during the operational period. These samples shall be collected at monitoring station TPSWCCS-1 and TPSWCCS-2 in the CCS, and the results submitted to the District by noon on the following Tuesday after their collection.

b. FPL shall prepare a weekly report which summarizes the daily reports for the preceding week (Monday at midnight through Sunday at 11:59 p.m.) and includes the following additional information:

i. Hourly stage data for the L-31E Canal measured at TPSW-1 and TPSW-2 for the weekly reporting period, whether or not the pumps operated. The report shall include a table of the weekly data and a graph of the stages.

ii. The weekly report shall include a table and graph of the hourly staff gage readings from SG-N (North of Palm Drive), SG-S (South of Palm Drive), and SG-PSS (South Pump Station).

iii. The weekly report shall be submitted by noon on the following Tuesday of each week

c. The reports shall be e-mailed to Simon Sunderland, P.G., Consulting Hydrogeologist at [ssunder@sfwmd.gov](mailto:ssunder@sfwmd.gov) or Maria Clemente, P.E., Bureau Chief at [mclement@sfwmd.gov](mailto:mclement@sfwmd.gov). Both reports shall reference this Final Order. Upon District review of the daily and weekly reports, conference calls may be required.

d. Additionally, the District may request available monitoring data at any time and FPL shall provide the same within two hours of the District's request.

**46. Special Pump Station Criteria:**

a. The District may require FPL to terminate pumping at any time. Upon receipt of any oral or written request from the District to terminate pumping, FPL must cease pumping within two (2) hours.

b. FPL shall coordinate the pumping at both stations to assure that, from a non-flow condition, the north station pumps shall be started first. The south station pumps shall be started within five (5) minutes of the north station pumps start, with an equivalent flow. Similarly, when pump operation ceases, the south station pumps shall cease first and the north station pumps shall cease within 5 minutes.

c. FPL shall prepare a storm/hurricane contingency plan that includes securing the pump stations and ancillary equipment during a major weather event, plans to empty all fuel lines from the storage tanks to the pumps. A copy of the plan should be available for the District to review, if requested. FPL is required to monitor the weather and hurricane forecasts and make the appropriate timely preparations.

**47. Pump Requirements:**

a. The pump stations shall be staffed on a 24-hour basis.

b. Pump Discharge Curves: Pump discharge curves used in determining rates of discharge while pumps are operating, as deployed in the field, shall be provided to the District prior to pump operation for the purpose of calculating flow rates and volumes.

c. Totalizing Hour Meters: FPL shall install totalizing flow meters at each pump authorized by this Order and such meters shall be available for periodic District inspection and verification. Documentation of an up-to-date and accurate calibration for each of the totalizers shall be provided before pumping commences.

48. This Order authorizes FPL to take actions under Chapter 373, Fla. Stat., as provided herein. This Order does not relieve FPL from the requirements to obtain any other federal, state, or local authorizations.

49. This Order does not constitute a water use or right-of-way permit or grant any legal right to water as set forth in Chapter 373, Fla. Stat., and associated District rules and regulations over the water intercepted and stored under this Order.

50. This Order does not convey any property right to FPL, nor any rights and privileges other than those specified in this Order. This Order shall not be construed as

an abandonment or any other such impairment or disposition of the District's property rights.

51. This Order shall not be construed as a substitute for, or waiver of, any right-of-way, surface water management, water use, or other permits required of FPL under the District's rules and regulations.

52. FPL shall insure that harmful impacts to the water resources, off-site land uses, or existing legal uses of water do not occur as a result of this Order. In the event such harmful impacts result from actions authorized by this Order, FPL shall implement all actions, as directed by the District, to cease such harmful impacts and, if necessary, to mitigate such impacts. Failure to comply with this requirement shall be considered a violation of this Order.

53. Failure to comply with the terms of this Order shall constitute a violation of a District Order under Chapter 373, Fla. Stat., and enforcement proceedings may be brought in any appropriate administrative or judicial forum.

54. The District reserves the right to initiate appropriate legal action, to impose civil penalties, and collect attorney's fees and costs to enforce the terms of this Order.

55. This Order may be modified or amended at any time, as appropriate for the protection of the public health, safety, and welfare and the water resources of south Florida by the Governing Board, Executive Director, or Executive Director's designee.

56. The Executive Director or Executive Director's designee may require FPL to cease withdrawal and/or use activities under this Order at any time.

57. Failure to comply with the conditions contained within this Order shall constitute a violation of a District Order under Chapter 373, Florida Statutes, and

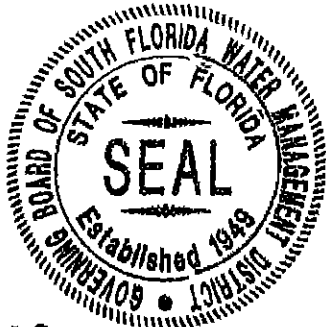
enforcement proceedings may be brought in any appropriate administrative or judicial forum.

58. If the District petitions or sues for enforcement of the terms of this Order, the District reserves the right to initiate appropriate legal action, to impose civil penalties and collect attorney's fees and costs.

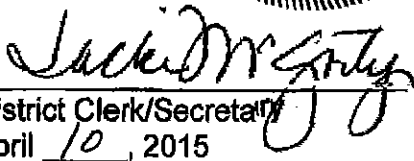
59. This Order shall terminate on November 30, 2016 at 11:59 p.m. or upon written notice from the District's Executive Director or the Executive Director's designee, whichever occurs first.

60. A Notice of Rights attached hereto as Exhibit E.

DONE AND SO ORDERED in West Palm Beach, Florida, on this 9th day of April, 2015.




Attested:

  
District Clerk/Secretary  
April 10, 2015

SOUTH FLORIDA WATER  
MANAGEMENT DISTRICT  
By its Governing Board

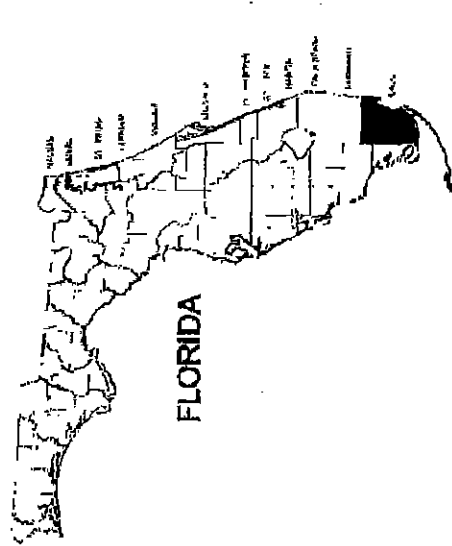
  
Blake C. Guillory, P.E.  
Executive Director

Legal Form Approved:

  
Jennifer D. Brown, Esq.

# FPL TURKEY POINT COOLING CANAL FRESHWATER RECHARGE MIAMI-DADE COUNTY, FLORIDA

PROJECT LOCATION



FLORIDA

LOCATION MAP

N.T.S.



FPL

## DRAWING INDEX

- C-1 COVER SHEET
- C-2 CONSTRUCTION NOTES
- C-3 PROJECT OVERVIEW
- C-4 INTAKE SYSTEM SITE PLAN
- C-5 INTAKE SYSTEM PUMP AND UNDER ROAD CROSSING
- C-6 DISCHARGE SYSTEM SITE PLAN
- C-7 DISCHARGE SYSTEM PUMP AND LEVEE CROSSING
- C-8 DISCHARGE SYSTEM PIPE PROFILES
- D-9 DISCHARGE SYSTEM PIPE CROSSING OVER INTERCEPTOR CANAL
- C-10 PIPE BRIDGE PLAN AND DETAILS
- C-11 EROSION CONTROL PLAN



VICINITY MAP

1"=500' (200M)  
1"=600' (150M)



**TAYLOR ENGINEERING INC.**  
10000 S.W. 11th Ave.  
Suite 100  
Miami, FL 33154  
(305) 551-1100  
www.taylor-engineering.com

**FH TURKEY POINT COOLING CANAL FRESHWATER RECHARGE**  
MIAMI-DADE COUNTY, FLORIDA

C-1

SunshineFL.com



EXHIBIT B

## CHAPTER 40E-10 WATER RESERVATIONS

- 40E-10.011 Policy and Purpose
- 40E-10.021 Definitions
- 40E-10.031 Water Reservations Implementation
- 40E-10.061 Water Reservation Areas: Lower East Coast Planning Area

### 40E-10.011 Policy and Purpose.

The purpose of this chapter is to define the quantity, location and timing of waters reserved from allocation for the protection of fish and wildlife pursuant to Section 373.223(4), F.S., for specified water bodies. Water reservations are implemented in the water use program pursuant to Chapter 40E-2, F.A.C.

*Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History—New 7-2-09, Amended 7-14-14.*

### 40E-10.021 Definitions.

(1) *Fakahatchee Estuary* – The area within the Ten Thousand Islands region including the following river/bay systems, from west to east: Blackwater River/Blackwater Bay, Whitney River/Buttonwood Bay, Pumpkin River/Pumpkin Bay, Wood River, Little Wood River and Faka Union Canal/Faka Union Bay, and Fakahatchee Bay as depicted in Figure 1-3 Fakahatchee Estuary.

(2) *Picayune Strand* – The area located southwest of the Florida Panther National Wildlife Refuge, north of the Ten Thousand Islands NWR, east of the South Belle Meade State Conservation and Recreation Lands (CARL) Project, west of the Fakahatchee Strand Preserve State Park, and northeast of Collier-Seminole State Park as depicted in Figure 1-2 Picayune Strand. The legal description of the Picayune Strand is contained in Appendix 1.

(3) *North Fork of the St. Lucie River* – The area that extends from the Gordy Road structure (state plane coordinates, x851212.831, y1116105.7470), to the confluence of the North Fork of the St. Lucie River and the C-24 canal (state plane coordinates, x873,712.20, y1064,390.41) as depicted in Appendix 2, Figure 2-1.

(4) *Nearshore Central Biscayne Bay* – The area within Biscayne Bay up to 1640 feet (500 meters) from the shoreline beginning south of Shoal Point extending southward to north of Turkey Point as depicted in Figure 3-1.

(5) *Caloosahatchee River* – The surface waters that flow through the S-79 structure, combined with tributary contributions below S-79 that collectively flow southwest to San Carlos Bay, as defined in subsection 40E-8.021(2), F.A.C.

(6) *Caloosahatchee River (C-43) West Basin Storage Reservoir* – A reservoir located in Hendry County, Florida, west of the City of LaBelle on the east side of the Townsend Canal and south of SR 80 as described in Appendix 1-12, and depicted in Figure 1-13 (also known as the 'C-43 Reservoir').

*Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History—New 7-2-09, Amended 3-18-10, 7-21-13, 7-16-14.*

### 40E-10.031 Water Reservations Implementation.

(1) Applicants for consumptive use permits shall meet the requirements of this rule by providing reasonable assurances that Rule 40E-2.301, F.A.C., and Section 3.11 of the "Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District," incorporated by reference in Rules 40E-2.091, F.A.C., are met.

(2) Water reserved for the protection of fish and wildlife contained within the Picayune Strand and Fakahatchee Estuary is defined in subsections 40E-10.041(1)-(2), F.A.C.

(3) Water reserved for the protection of fish and wildlife contained within the North Fork of the St. Lucie River is defined in subsection 40E-10.051(1), F.A.C.

(4) Water reserved for the protection of fish and wildlife contained within Nearshore Central Biscayne Bay is defined in subsections 40E-10.061(1)-(2), F.A.C.

(5) Water reserved for the protection of fish and wildlife contained within and released, via operation, from the Caloosahatchee River (C-43) west Basin Storage Reservoir is defined in subsection 40E-10.041(3), F.A.C.

*Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History—New 7-2-09, Amended 3-18-10, 7-21-13, 7-14-14, 7-16-14.*

## EXHIBIT C

**40E-10.061 Water Reservation Areas: Lower East Coast Planning Area.**

(1) Nearshore Central Biscayne Bay as defined in subsection 40E-10.021(6), F.A.C.:

All surface water contained within Nearshore Central Biscayne Bay is reserved from allocation (see Figure 3-1).

(2) Surface water flowing into Nearshore Central Biscayne Bay as identified below is reserved from allocation:

(a) Surface water flows depicted on Figures 3-2.A and 3-2.B through S-123 derived from the following contributing canal reaches:

1. The C-100A canal upstream of S-123 to S-120 including all integrated conveyance canals.
2. The C-100C canal upstream of S-123 to S-119 including all integrated conveyance canals.
3. The C-100B canal upstream of S-123 to S-122 including all integrated conveyance canals.
4. The C-100 canal upstream of S-123 to S-118 including all integrated conveyance canals.

(b) Surface water flows depicted on Figures 3-3.A and 3-3.B through S-21 derived from the following contributing canal reaches:

1. The L-31E borrow canal upstream of S-21 to the canal terminus.
2. The C-1 canal upstream of S-21 to S-122 and S-149 including all integrated conveyance canals.
3. The C-1 canal upstream of S-21 to the C-1W canal and S-338 including all integrated conveyance canals.

(c) Surface water flows depicted on Figures 3-4.A and 3-4.B which is the combined flow through S-21A, S-20G, and S-20F as derived from the following contributing canal reaches:

1. The C-102 canal connecting to the C-102 N canal upstream of S-21A to S-195.
2. The C-102 canal upstream of S-21A to S-165.
3. The L-31E borrow canal upstream of S-21A to its terminus near S-21 including the Gould's Canal.
4. The L-31E borrow canal upstream of S-21A south to S-20G.
5. The Military canal upstream of S-20G.
6. The C-103 canal upstream of S-20F to S-179.
7. The L-31E borrow canal upstream of S-20F to S-20G including all integrated conveyance canals.
8. The L-31E borrow canal from S-20F south to the North Canal.
9. The North Canal.
10. The L-31E borrow canal from S-20F south to the Florida City Canal.
11. The Florida City Canal from Southwest 107th Avenue to its confluence with the L-31E borrow canal.

Notwithstanding the above, presently existing legal uses for the duration of a permit existing on July 18, 2013, are determined to be not contrary to the public interest pursuant to Section 373.223(4), F.S.

Reservations contained in the section shall be reviewed in light of changed conditions or new information.

*Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History New 7-21-13.*

### APPENDIX 3: LOWER EAST COAST PLANNING AREA

Figure 3-1 Nearshore Central Biscayne Bay Reservation Water Body and Protected Canal Reaches

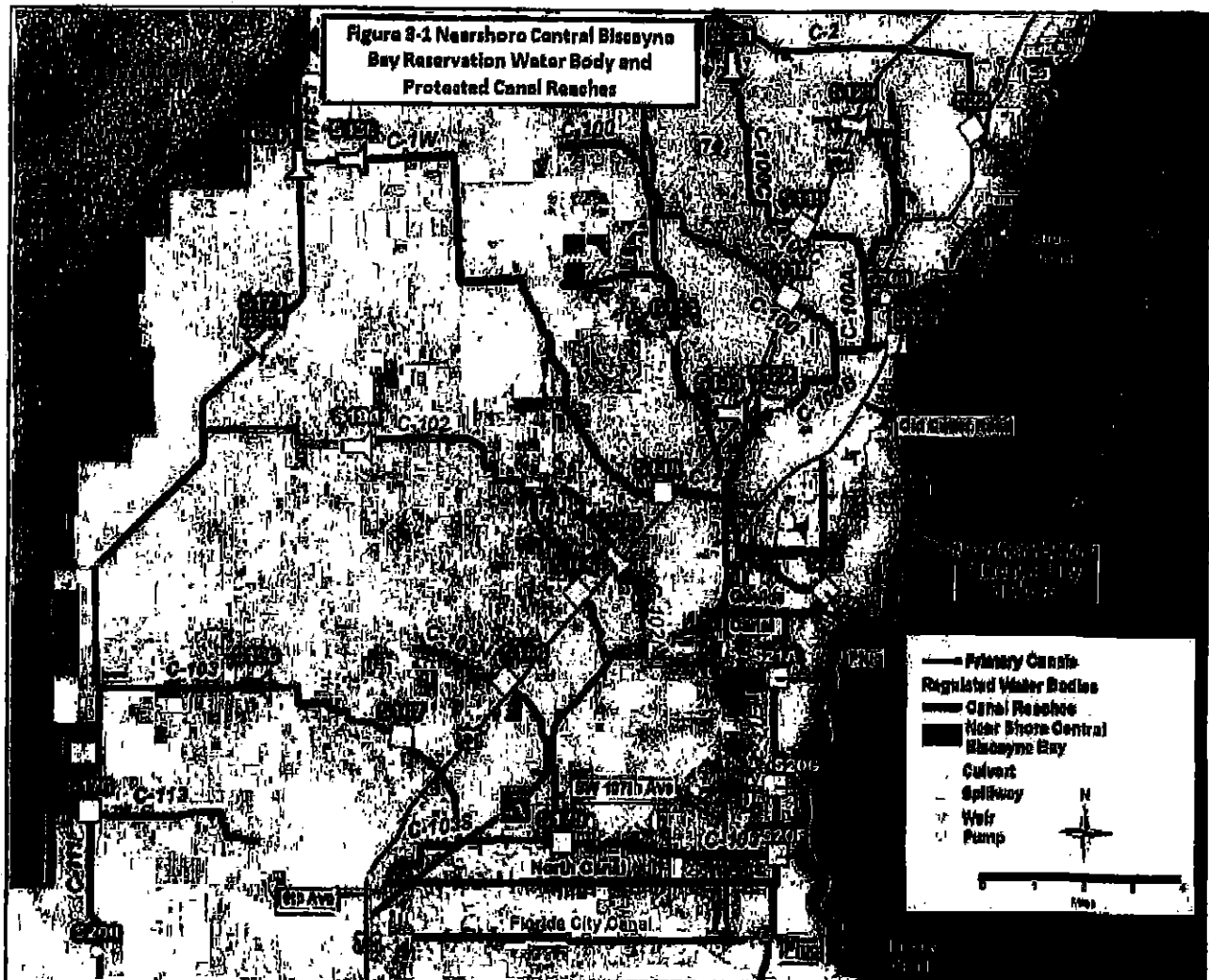


Figure 3-2.A Surface Water Flow from the C-100 canal through S-123 into Biscayne Bay during the Wet Season (June-October) (1986-2011)

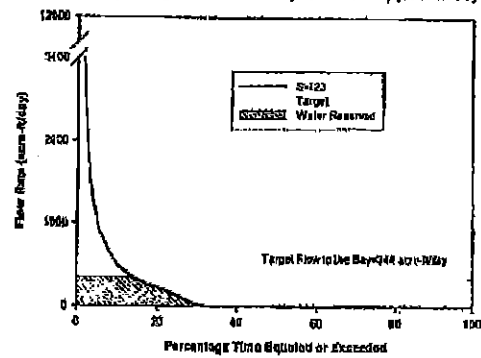


Figure 3-2.B Surface Water Flow from the C-100 canal through S-123 into Biscayne Bay during the Dry Season (November-May) (1986-2011)

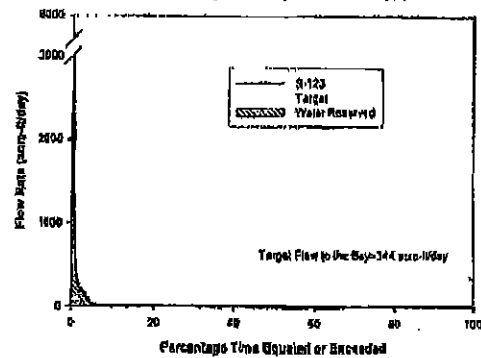


Figure 3-3.A Surface Water Flow from the C-1 canal through S-21 into Biscayne Bay during the Wet Season (June-October) (1986-2011)

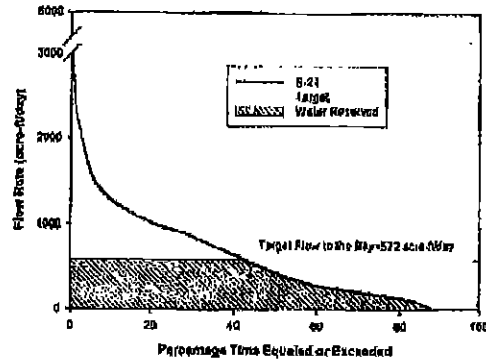


Figure 3-3.B Surface Water Flow from the C-1 canal through S-21 into Biscayne Bay during the Dry Season (November-May) (1986-2011)

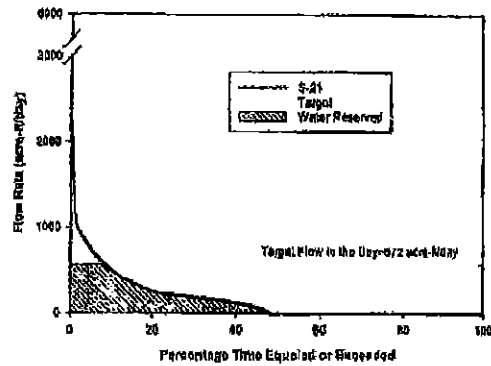


Figure 3-4.A Surface Water Flow from the C-102+Military+C-103 Canal through S-21A+S-20G+S-20F into Biscayne Bay during the Wet Season (June-October) (1986-2011)

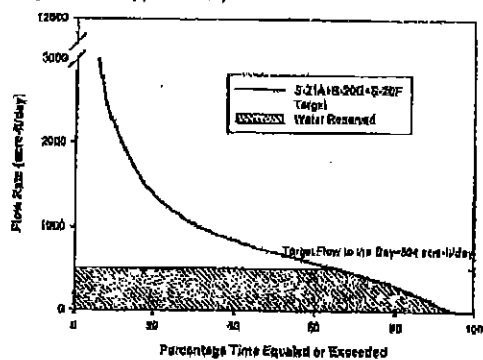
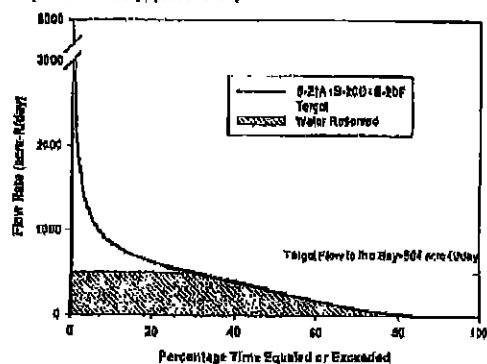


Figure 3-4.B Surface Water Flow from the C-102+Military+C-103 Canal through S-21A+S-20G+S-20F into Biscayne Bay during the Dry Season (November-May) (1986-2011)



**40E-2.301 Conditions for Issuance of Permits.**

(1) In order to obtain a permit, permit renewal, or permit modification under this chapter, an applicant must give reasonable assurances that the proposed water use at the time the permit application is deemed complete:

- (a) Will not cause harmful saline water intrusion;
- (b) Will not harm offsite land uses;
- (c) Will not cause harm to wetlands or other surface waters;
- (d) Will not cause pollution of the water resources;
- (e) Is otherwise a reasonable-beneficial use as defined in Section 373.019(13), F.S., with consideration given to the factors set forth in Rule 62-40.410, F.A.C.;
- (f) Will not interfere with presently existing legal uses;
- (g) Is in accordance with Section 373.2295, F.S., concerning interdistrict transfer of groundwater and Section 373.223(3), F.S., concerning water transport and use of groundwater or surface water across county boundaries.
- (h) For uses with a recommended maximum allocation which exceeds 100,000 gallons per day or uses within a mandatory reuse zone, makes use of a reclaimed water source in accordance with the criteria contained in the "Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District," incorporated by reference in Rule 40E-2.091, F.A.C.
- (i) Is in accordance with any minimum flow or level and implementation strategy established pursuant to Sections 373.042 and 373.0421, F.S.; and
- (j) Is consistent with Sections 373.016 and 373.036, F.S., and otherwise is consistent with the public interest as prescribed by Chapter 373, F.S., and this chapter.
- (k) Will not withdraw water reserved under Chapter 40E-10, F.A.C.

(2) In order to satisfy the conditions for permit issuance in subsection (1), the permit applicant must provide reasonable assurances that the criteria in the "Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District," incorporated by reference in Rule 40E-2.091, F.A.C., are met.

*Rulemaking Authority 373.044, 373.113, 373.118, 373.171 FS. Last Implemented 373.036, 373.042, 373.083, 373.103(4), 373.1501, 373.1502, 373.223, 373.229, 373.2295, 373.470 FS. History--New 8-14-02, Amended 8-31-03, 4-23-07, 2-13-08, 7-2-09, 7-14-14.*

## **APPLICANT'S HANDBOOK FOR WATER USE PERMIT APPLICATIONS (07-16-2014)**

### **3.11.3 Nearshore Central Biscayne Bay**

A permit applicant shall provide reasonable assurances that the proposed use will not withdraw water reserved under subsection 40E-10.061(1), F.A.C. Compliance with the following criteria constitutes reasonable assurances that water reserved in Rule 40E-10.061, F.A.C., will not be withdrawn. Water not reserved under Rule 40E-10.061, F.A.C., shall be allocated pursuant to this Subsection.

For this section, the following definitions apply:

**Direct withdrawal:** Withdrawal of surface water from facility intakes physically located within the surface water column of Nearshore Central Biscayne Bay as depicted on Figure 3-1 in Chapter 40E-10, F.A.C. No direct withdrawals shall be authorized pursuant to this rule.

**Indirect withdrawal:** Withdrawal of surface water from facility intakes physically located within the surface water column of any canal reach identified in Figure 3-1 in Chapter 40E-10, F.A.C.

The following uses do not withdraw reserved water:

- A. Withdrawals of groundwater;
- B. Withdrawals authorized by Rules 40E- 2.061 (General Permits by Rule) and dewatering operations that 1) will not exceed a maximum of ten 10) mgd, with a maximum of 1,800 mg total pumpage; and 2) will not exceed a total duration of one year for the entire project;
- C. Renewals of indirect withdrawals authorized by a permit existing on July 21, 2013;
- D. A permit modification involving an indirect withdrawal authorized by a permit existing on July 21, 2013 that does not change the source, increase the allocation or change withdrawal locations, such as replacement of existing

**APPLICANT'S HANDBOOK FOR WATER USE PERMIT APPLICATIONS (07-16-2014)**

surface water pumps or intakes, crop changes that do not change the allocation or timing of use, or decrease in allocation;

- E. A new indirect withdrawal with no greater allocation and impact, including changes in timing, than a terminated or reduced permit that was existing on July 21, 2013 and occurs upstream of the same coastal structure; and,
- F. Indirect withdrawals which do not withdraw reserved water as defined in Rule 40E-10.061 F.A.C.



## TECHNICAL MEMORANDUM

**From:** Peter F. Andersen and James L. Ross, Tetra Tech  
**To:** Stacy Foster and Scott Burns, Florida Power & Light Company  
**Date:** March 13, 2015  
**Subject:** Evaluation of L-31E Water Addition Impacts on CCS Salinity Reduction

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### Introduction

This technical memorandum describes water and salt balance modeling of the addition of L-31E water as a salinity reduction measure in the Florida Power & Light (FPL) Cooling Canal System (CCS), located at the Turkey Point Nuclear Power Plant. The modeling was conducted to provide an assessment of the effects of adding L-31E water to the CCS between June 1 and November 30 in 2015 and 2016 in an effort to reduce the salinity of the CCS. Knowledge of the effects of adding this water will help to identify how effective it is at reducing CCS salinity under different assumptions of water availability and maximum daily withdrawals.

A spreadsheet-based water and salt balance model was employed for this analysis. This model was developed as a part of the Turkey Point Uprate monitoring program. The South Florida Water Management District has reviewed the model at various stages of its development and application. The version of this model employed for the predictive analysis is transient and calibrated to 45 months of hydrologic and water quality data collected within the CCS and in the surrounding environment (Ecology and Environment, 2014). This model was modified and executed to provide estimates of the effect of adding various amounts of L-31E water in an effort to attain reductions in CCS salinity.

### Background

The CCS is a constructed surface water body that receives heated water from Turkey Point Power-Generating Units 1, 3, and 4. As the heated water travels southward along the discharge canals and northward back to the plant along return canals, it is cooled by evaporation and mixing with inflowing water from the Biscayne Aquifer. Due to the evaporative process, which is facilitated by the elevated temperature of the water, a portion of the water from the CCS is lost to the atmosphere, leaving dissolved solids behind in the CCS and producing hypersaline conditions in the CCS. Hypersaline water exhibits salinities greater than that of seawater, which has a salinity of approximately 35 PSU. Over the 10 years prior to 2014, salinity in the CCS has ranged between 42 and 69 PSU. During 2014, salinity in the CCS increased to a maximum daily average of approximately 99 PSU (monitoring station TPSWCCS-4, September 9, 2014). Subsequent to that peak, salinities reduced and varied between 65 and 75 PSU in the fall of 2014. Part of this salinity reduction is attributable to measures undertaken by FPL that included addition of L-31E water and groundwater from a Floridan well associated with Unit 5.

In order to mitigate the contribution of hypersaline water to the underlying Biscayne Aquifer, and return the CCS to equilibrium consistent with pre-2014 conditions, FPL is evaluating remedial measures to moderate CCS salinities and prevent significant increases in the near future. In the course of prior evaluations conducted to investigate the response of CCS salinity to

the addition of less saline water, an inspection of monitoring data between 2010 and 2012 revealed a correlation between daily rainfall on the CCS and CCS salinity, where rainfall events were generally followed by short term reductions in CCS salinity. Two phenomena were evident in this review of CCS monitoring data: 1) CCS salinities generally reduce during rainy months (May through October); 2) significant rainfall events produce notable reductions in CCS salinity. The latter phenomenon is effectively illustrated by a large (> 7 inches) rainfall event in late-September 2010 that induced an approximate 10 PSU drop in the average CCS salinity.

Because precipitation events are simply freshwater inflows to the CCS, they effectively dilute the water and reduce salinity. Based on the effectiveness of such low-salinity inflows in reducing salinity, the addition of L-31E water to the CCS was proposed during times when such water was available. The water and salt balance model mentioned above was reconfigured to evaluate this salinity reduction measure with respect to its effectiveness in mitigating high CCS salinity in the near future. These evaluations and associated results and conclusions are discussed below.

### **Reconfiguration of Water Balance to Represent Future Predictions**

#### ***Calibrated Water and Salt Balance Model***

Based on monitoring data in and outside of the CCS, Tetra Tech constructed a transient water and salt balance model of the CCS and calibrated it to 45 months of hydrologic and salinity data collected from the CCS between September 1, 2010 and May 31, 2014 (Ecology and Environment, 2014). This model calculates inflows to the CCS (e.g. precipitation, seepage from groundwater) and outflows from the CCS (e.g. evaporation, seepage to groundwater) on a daily timestep using hydrologic, water quality, and meteorological data. These data were collected at intervals ranging from 15-minute to 1-day throughout Biscayne Aquifer, Biscayne Bay, the CCS, and nearby canals. The model uses the calculated daily inflows and outflows to effectively simulate daily changes in CCS water and salt storage. These changes in storage are then employed to calculate daily changes in CCS water levels and salinity.

This model was later revised to incorporate data and simulate conditions through October 2014. Because this timeframe witnessed significant stresses on the CCS, including elevated evaporative losses from the CCS, relatively low precipitation-based inflows, and the influx of pumped L-31E water, it was determined that a model calibrated to the extended timeframe would be robust and a better predictive tool. With minor changes to model parameter values, the calibrated 45-month model was extended and re-calibrated to effectively simulate the 50-month timeframe through October 2014. The quality of the model is illustrated by the reasonably accurate simulation of daily changes in average CCS water levels and salinity over the 50-month period (Figure 1). It should be noted that the model correctly simulates reductions in salinity that result from both large rainfall events (e.g. October 1, 2010) and the addition of L-31E water (late September through mid-October 2014). The ability to match the response of salinity to the addition of a known quantity and quality of water provides confidence that the model is able to predict changes in CCS salinity due to prescribed CCS salinity reduction measures.

#### ***Predictive Water and Salt Balance Model***

In order to predict future changes in CCS water level and salinity, the approach used to calculate CCS inflows and outflows was changed relative to that employed for the historical timeframe in the following manner. During the 50-month historical period (September 2010 through October

2014), the calculation of water and salt exchanges between the CCS and the surrounding environment relied on *measured* CCS water levels and salinities. Because future CCS conditions are unknown, predicted CCS inflows and outflows are calculated using *simulated* CCS water levels and salinities.

As previously mentioned, the calibrated water and salt balance model simulates daily changes in CCS water level and salinity through October 31, 2014. As such, the predictive simulation commences on November 1, 2014; this simulation extends over 2 years through November 30, 2016. The initial predictive water levels throughout the CCS are based on CCS water levels observed on October 31, 2014 and the change in water level due to the balance of water flows calculated for that day. In other words, the simulated November 1, 2014 water levels throughout the CCS are the sum of the measured CCS water levels on October 31 and the calculated change in water level due to the calculated CCS inflows and outflows for that day. The initial salinity conditions for the predictive model are calculated in an analogous manner; the simulated salinities throughout the CCS on November 1 are the sum of the average observed CCS salinities on October 31 and the calculated change in salinity due to the balance of salt flows calculated for that day. The daily exchanges of water and salt between the CCS and the surrounding environment for November 1 are determined using the calculated initial water levels and salinities throughout the CCS. The balance of these flows informs the predicted CCS water level and salinity, respectively, for the next day. The model continues step-wise calculations of water levels and salinity in this manner throughout the 25-month predictive simulation.

#### *Predictive Scenarios*

In order to represent conditions outside of the CCS, observed data from the historical period was repeated and acted as a surrogate for future hydrologic, water quality, and meteorological conditions in Biscayne Aquifer, Biscayne Bay, nearby canals, and the atmosphere. Additionally, the model does not currently evaluate a CCS thermal balance, so CCS water temperatures observed during the historical period were employed to represent future thermal conditions. Because external conditions and, especially, CCS water temperatures play a large role in inducing changes to CCS water levels and salinity, two baseline predictive scenarios were evaluated; each scenario is distinct in what historical data were used to represent future conditions. Predictive Scenario A assumes future conditions mimic those observed between November 1, 2010 and October 31, 2012. Conditions during this timeframe reflected normal weather patterns and were conducive to moderating CCS salinity. Predictive Scenario B assumes future conditions mimic those observed between November 1, 2013 and October 31, 2014, a time during which environmental conditions (e.g. precipitation, CCS water temperatures) reflected dry weather patterns and produced dramatic increases in CCS salinity. This 1-year timeframe was repeated to produce a 2-year predictive simulation. In both scenarios, the conditions observed during the first November (2010, 2013) were repeated to create surrogate conditions for the last month (November 2016) of the 25-month predictive simulation.

Predicted water levels and salinities simulated by Scenario A are shown in Figure 2; Scenario B predictions are illustrated in Figure 3. Comparison of these figures reveals differences in how the CCS would respond to assumed future conditions. Predicted CCS salinity generally decreases over the 2-year timeframe under Scenario A, whereas CCS salinity generally rises during the 2-year predictive simulation under Scenario B. The reason for the disparity between these two predictive scenarios with respect to simulated salinity and water levels is, as previously

mentioned, the different historically observed external conditions and CCS water temperatures assumed to persist over the next two years; Scenario A assumes conditions consistent with those observed between November 2010 and October 2012, whereas Scenario B assumes conditions consistent with the November 2013 through October 2014 timeframe occurring twice sequentially. Between November 2010 and October 2012, observed CCS salinities averaged 54.8 PSU and peaked at 68.2 PSU (at station TPSWCCS-6). Between November 2013 and October 2014, salinity in the CCS averaged 79.8 PSU and reached a peak of approximately 98.5 PSU (at station TPSWCCS-4). Water levels between November 2010 and October 2012 were generally higher than those between November 2013 and October 2014. It is clear from this comparison that environmental conditions during the first two year period were more effective at moderating CCS salinity than those conditions observed between November 2013 and October 2014.

Thus, construction and simulation of two predictive scenarios is predicated on two motivations. First, predicted CCS water levels and salinity made with model Scenarios A and B will provide a range of anticipated conditions in the CCS in the near future. Predictions made with Scenario A will reflect environmental conditions that are conducive to relatively low and stable salinities in the CCS, whereas predictions made with Scenario B will reflect the deleterious conditions that can coerce the CCS into a new equilibrium with higher salinity and lower water levels. Second, the two predictive scenarios will help to elucidate the relative effectiveness of L-31E water additions under different environmental conditions. Predictions with both scenarios will help to provide a realistic range of CCS salinity changes due to the proposed remedial measures. These salinity reduction measures and their respective outcomes are discussed below.

### **Simulation of L-31E Water**

#### *Determination of Available Water*

In order to provide an estimate of potentially available water in L-31E consistent with the two predictive scenarios, daily combined stormwater discharge volumes through S-21A, S-20G, and S-20F into L-31E were determined for the historical periods that inform both Scenario A (November 2010 through October 2012) and Scenario B (November 2013 through October 2014). The daily reservation flow volume (254 cfs) was then subtracted from the combined daily discharge. The resulting daily L-31E flow volumes represent water that can potentially be added to the CCS as a salinity reduction measure. On days between June 1 and November 30 where the reservation flow exceeded combined daily discharge, it was assumed that no L-31E water was available for allocation to the CCS. In addition to using historical L-31E stormwater discharge volumes, L-31E salinities observed during the two historical timeframes were used to define the assumed future salinity of L-31E water added to the CCS.

In order to evaluate the effect of adding the excess L-31E stormwater water under different assumptions of availability, feasibility, and permitted allocations, three constraint criteria were applied to the excess flow volumes. These additional constraints defined a maximum daily volume of available L-31E water that could be allocated to the CCS; the three constraint volumes evaluated are 30 MGD, 60 MGD, and 100 MGD. The 100 MGD constraint reflects a situation in which the volume of L-31E that can be allocated to the CCS is limited only by the withdrawal pump capacity. Of the three flow constraints, the 100 MGD constraint results in the greatest volume of water added to the CCS from L-31E. Excess daily stormwater discharges to L-31E for the two historical periods evaluated, constrained to a maximum of 100 MGD, are plotted in

Figure 4.

*Simulation Results*

The addition of L-31E flow volumes were modeled by the predictive water and salt balance models (both Scenario A and Scenario B). The modeled actions comprising the added water, and associated changes to simulated CCS conditions, were represented by incorporating the additional prescribed flow and associated mass into the daily water and salt balance equations, respectively. These modeled actions changed the simulated CCS water levels and salinities from the base model results in Figures 2 and 3. In general, simulated CCS water levels increased and simulated CCS salinities decreased relative to the base case predictive simulations.

The simulated water levels in each of the three added water assumptions, as well as the simulated water levels for the base case, for predictive Scenario A are plotted in Figure 5. The water levels associated with predictive Scenario B are plotted in Figure 6. Both figures demonstrate that L-31E water added to the CCS results in an increase in the CCS stage. Table 1 provides the average CCS water levels over the 25-month predictive timeframe for the base (no action) case and constrained L-31E flow assumptions under both average and dry environmental conditions. These results show that the average CCS stage increases by a maximum of 0.22 feet and 0.18 feet for Scenarios A and B, respectively (both for the 100 MGD maximum L-31E allocation). Note that these averages are taken over the entire 25-month period and deviations in stage relative to the base case are more pronounced between June 1 and November 30 when L-31E water is permitted to be added to the CCS, as evident in Figures 5 and 6.

**Table 1. 25-month averaged CCS water levels under different assumptions of L-31E additions (in feet, NAVD88)**

<b>Environmental Conditions</b>	<b>Base Case (No Action)</b>	<b>Maximum of 30 MGD</b>	<b>Maximum of 60 MGD</b>	<b>Maximum of 100 MGD</b>
Scenario A (average)	-0.65	-0.57	-0.50	-0.43
Scenario B (dry)	-0.70	-0.63	-0.58	-0.52

Simulated CCS salinities in response to the added L-31E water, as well as the simulated salinities for the base case, for predictive Scenario A are plotted in Figure 7. The predicted salinities for Scenario B are plotted in Figure 8. Both figures demonstrate that more L-31E water added to the CCS results in a greater decrease in salinity. Table 2 provides the average CCS salinities over the 25-month predictive timeframe for the base (no action) case and the constrained L-31E flow assumptions under both average and dry environmental conditions. The greatest decrease in average salinity occurs when the L-31E water added to the CCS is constrained only by the withdrawal pump capacity (maximum of 100 MGD). In this remedial case, the 25-month average salinity reduces by 28.7 PSU relative to the base case for Scenario A and by 61 PSU relative to the base case for Scenario B. As in the case of additional stage, these salinities are averaged over the entire 25-month predictive timeframe. The impact of added water on salinity is most

pronounced when the L-31E water is assumed to be added to the CCS (between June 1 and November 30).

**Table 2. 25-month averaged CCS salinity under different assumptions of L-31E additions (in PSU)**

<b>Environmental Conditions</b>	<b>Base Case (No Action)</b>	<b>Maximum of 30 MGD</b>	<b>Maximum of 60 MGD</b>	<b>Maximum of 100 MGD</b>
Scenario A (average)	71.9	59.1	49.8	43.2
Scenario B (dry)	135.1	109.3	90.4	74.1

### **Summary**

This analysis evaluates the effectiveness of L-31E discharge-based salinity reduction measures for the Turkey Point CCS. The transient water and salt balance developed for the Uprate Project was used in a predictive, forward looking, sense. Each remedial measure was modeled using two different assumptions for future conditions. The two scenarios provide a bound on expected responses and show any differences in effectiveness that result from using different future background conditions. Details regarding the reconfiguration of the model to simulate the two future conditions are presented in the memorandum.

This analysis suggests that the addition of L-31E water to the CCS is an effective means of reducing CCS salinities over the predictive 2-year timeframe in light of both average and dry environmental conditions. One of the key reasons that L-31E water is so effective at ameliorating elevated CCS salinities is the fact that the addition of this water compensates for evaporative losses from the CCS. Because evaporation removes freshwater (and leaves suspended solids in the CCS), this outflow of water increases the salinity of the CCS. The addition of L-31E water can help to replace freshwater lost to evaporation and keep salinity relatively low. This is particularly true during dry conditions where precipitation is low and freshwater inflows are more critical. The pronounced effect of L-31E additions during dry conditions is illustrated in Figure 8 and Table 2.

### **References**

Ecology and Environment, 2014, Turkey Point Plan Comprehensive Post-Uprate Monitoring Report: Unit 3 & 4 Uprate Project, Prepared for Florida Power & Light, August 2014.

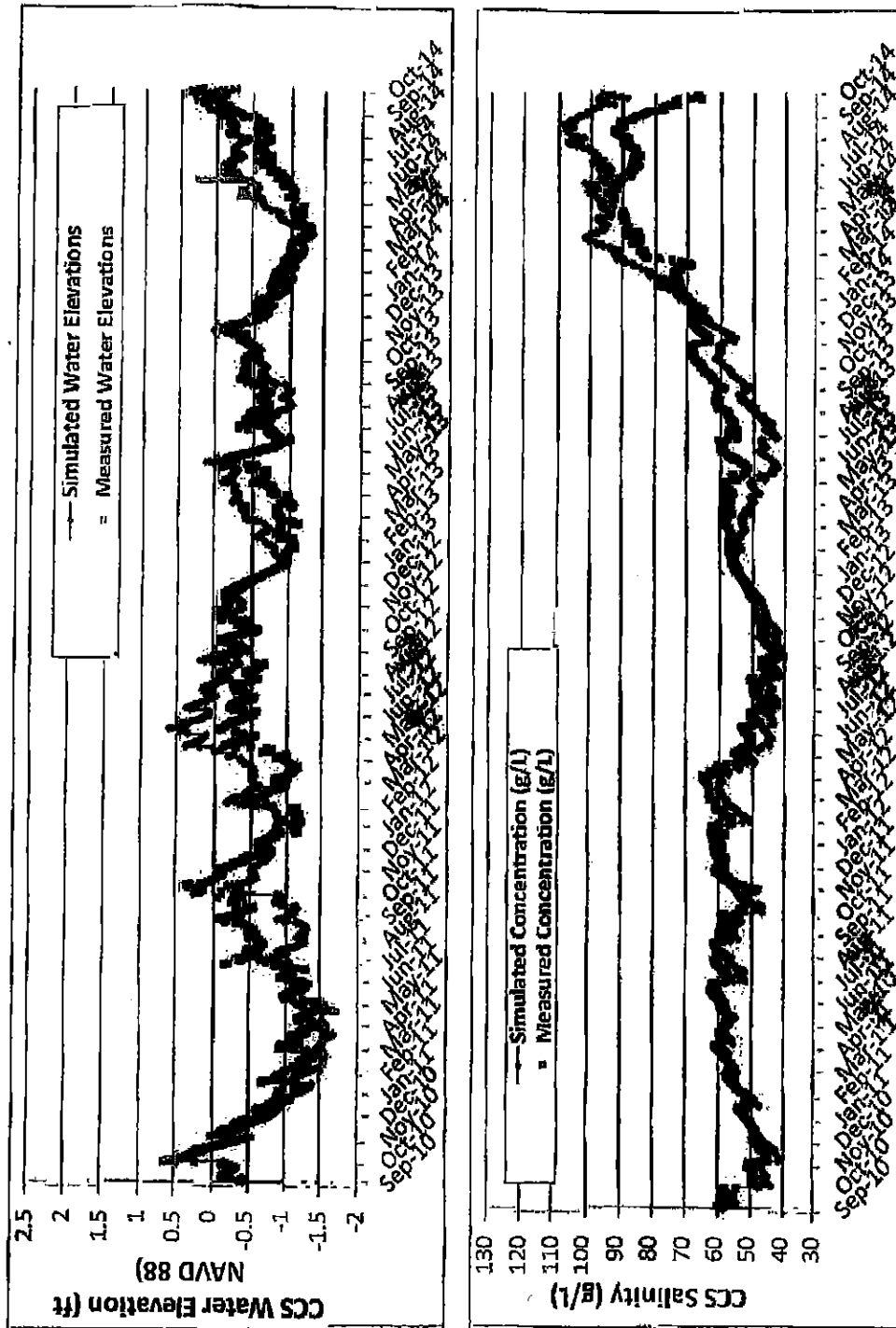


Figure 1. Observed and simulated CCS water levels (top) and salinity (bottom) produced by the 50-month calibrated balance model

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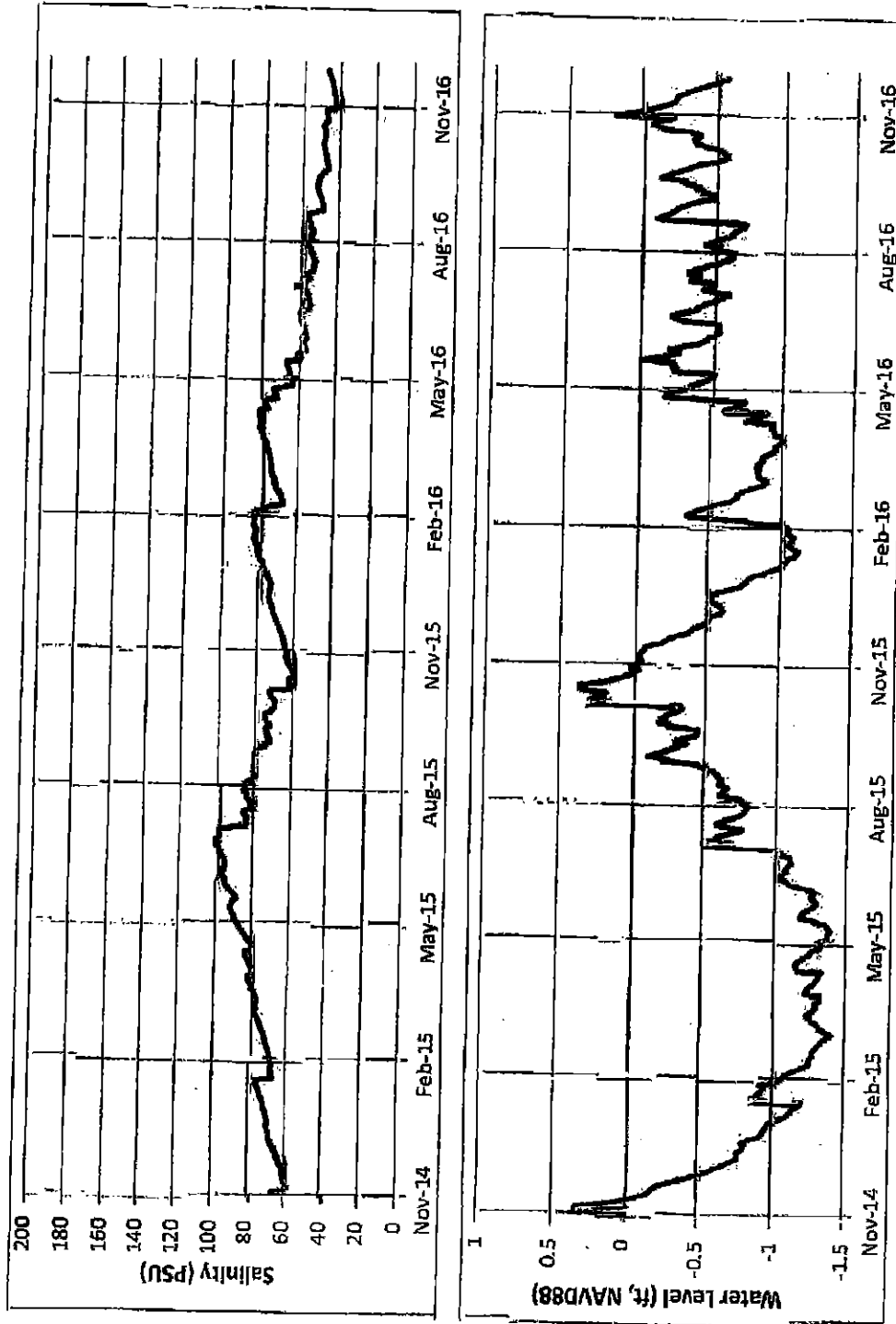


Figure 2. Predictions of salinity (top) and water level (bottom) for model Scenario A

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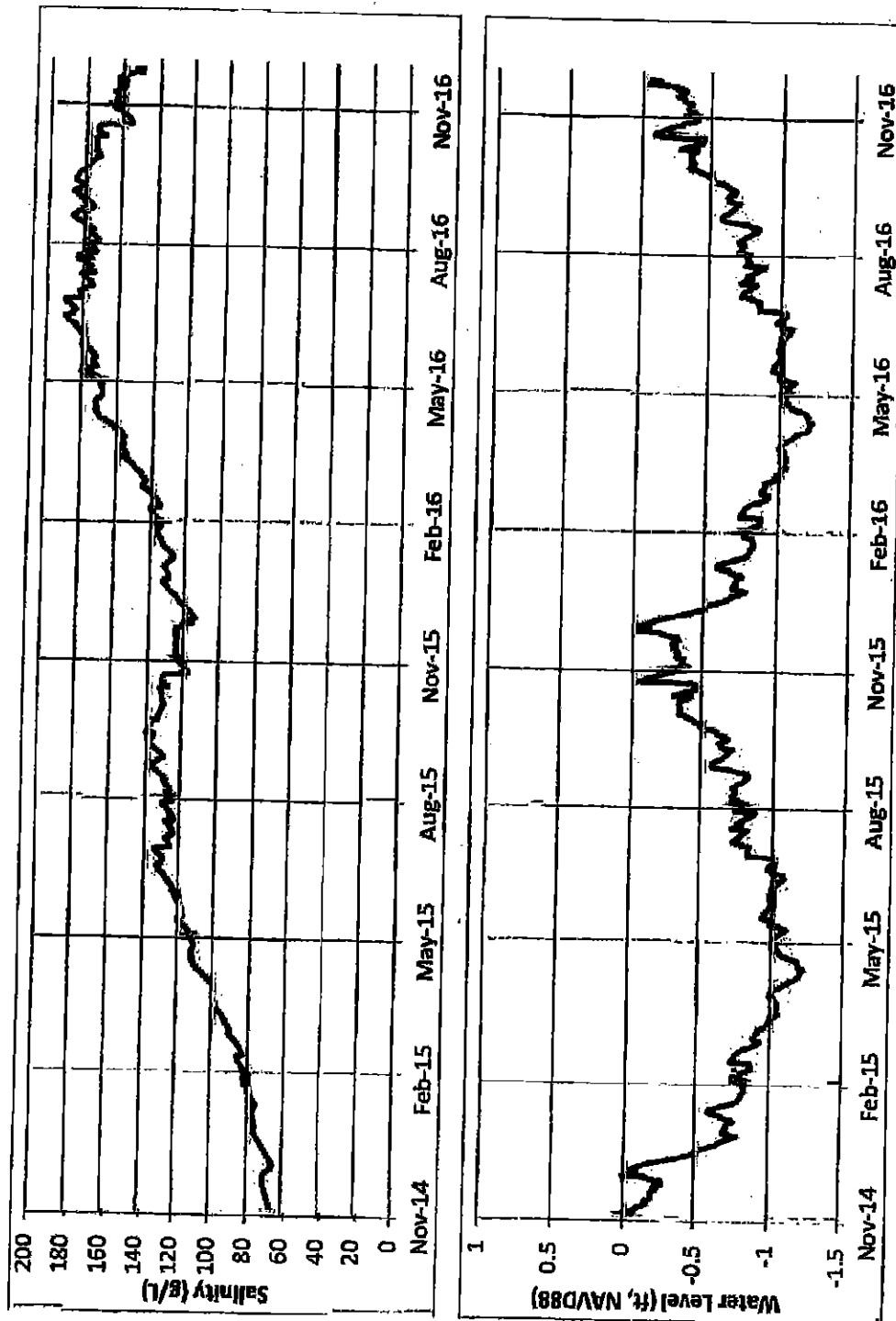


Figure 3. Predictions of salinity (top) and water level (bottom) for model Scenario B

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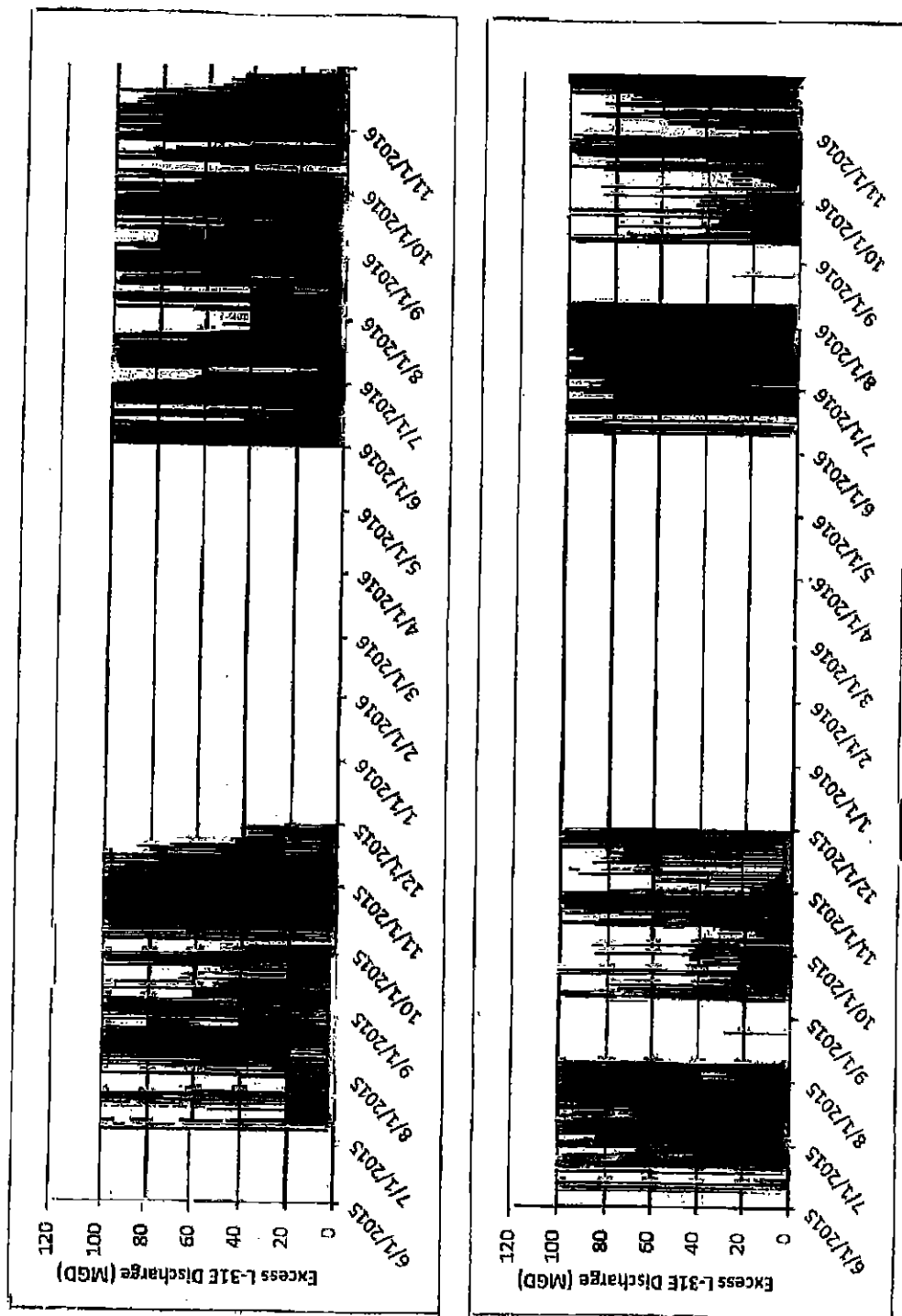


Figure 4. Maximum allocatable L-31E stormwater discharge for Scenario A (top) and Scenario B (bottom). Note: The predictive simulation begins in November 2014, though the flow allocations are not assumed to commence until June 2015.

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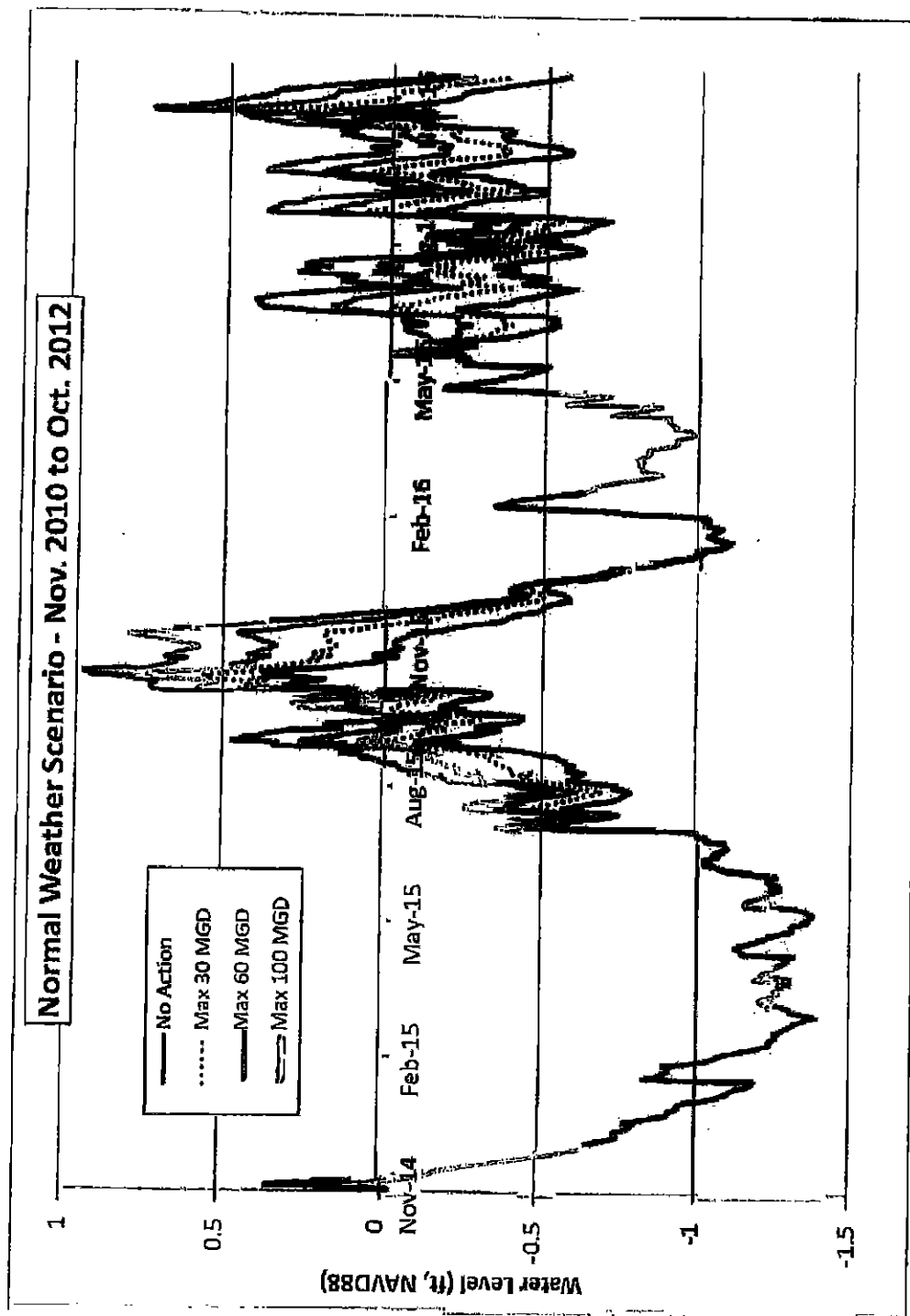


Figure 5. Simulated CCS water levels for predictive Scenario A base case and the constrained L-31E allocations

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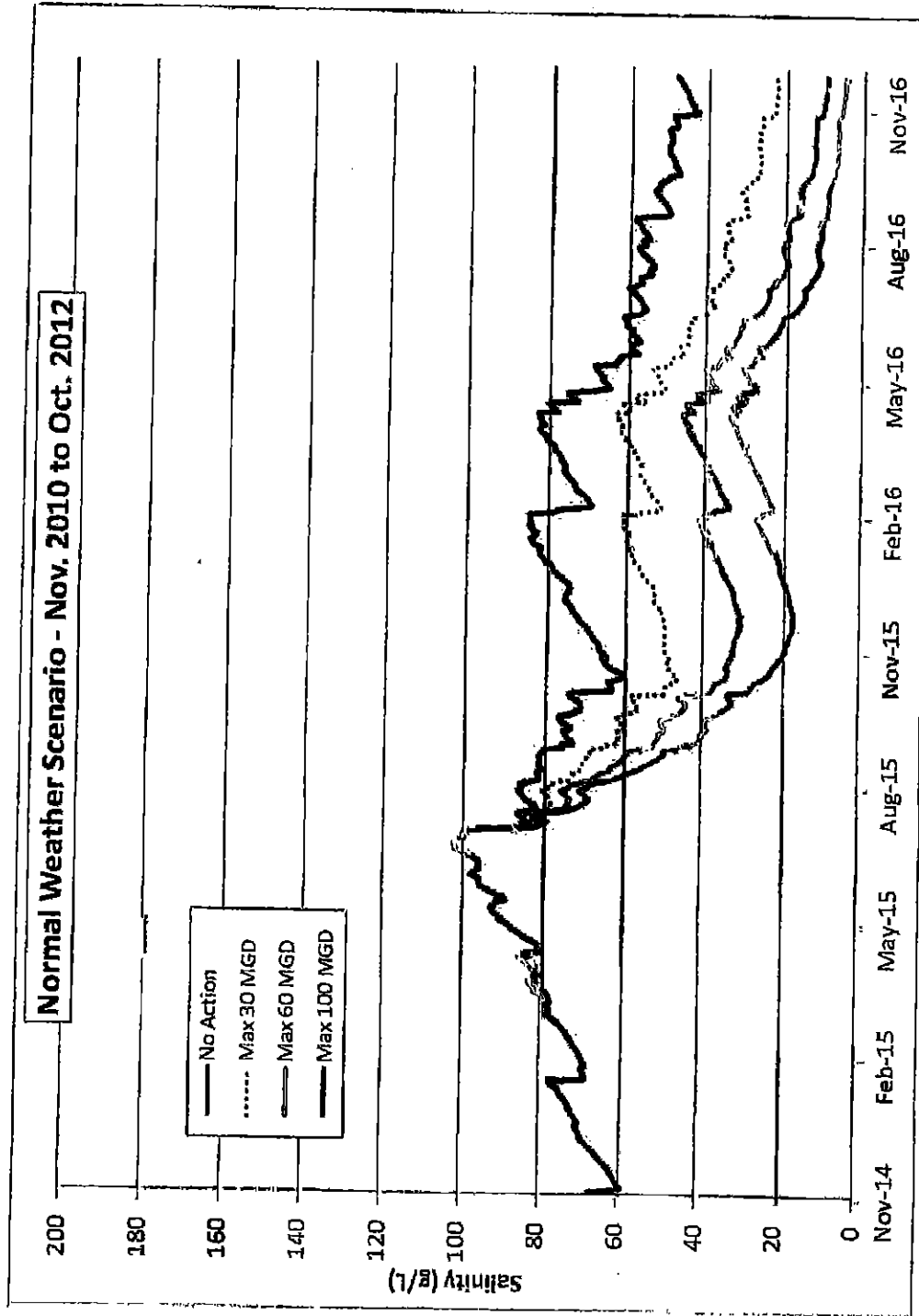


Figure 7. Simulated CCS salinities for predictive Scenario A base case and the constrained L-3IE allocations

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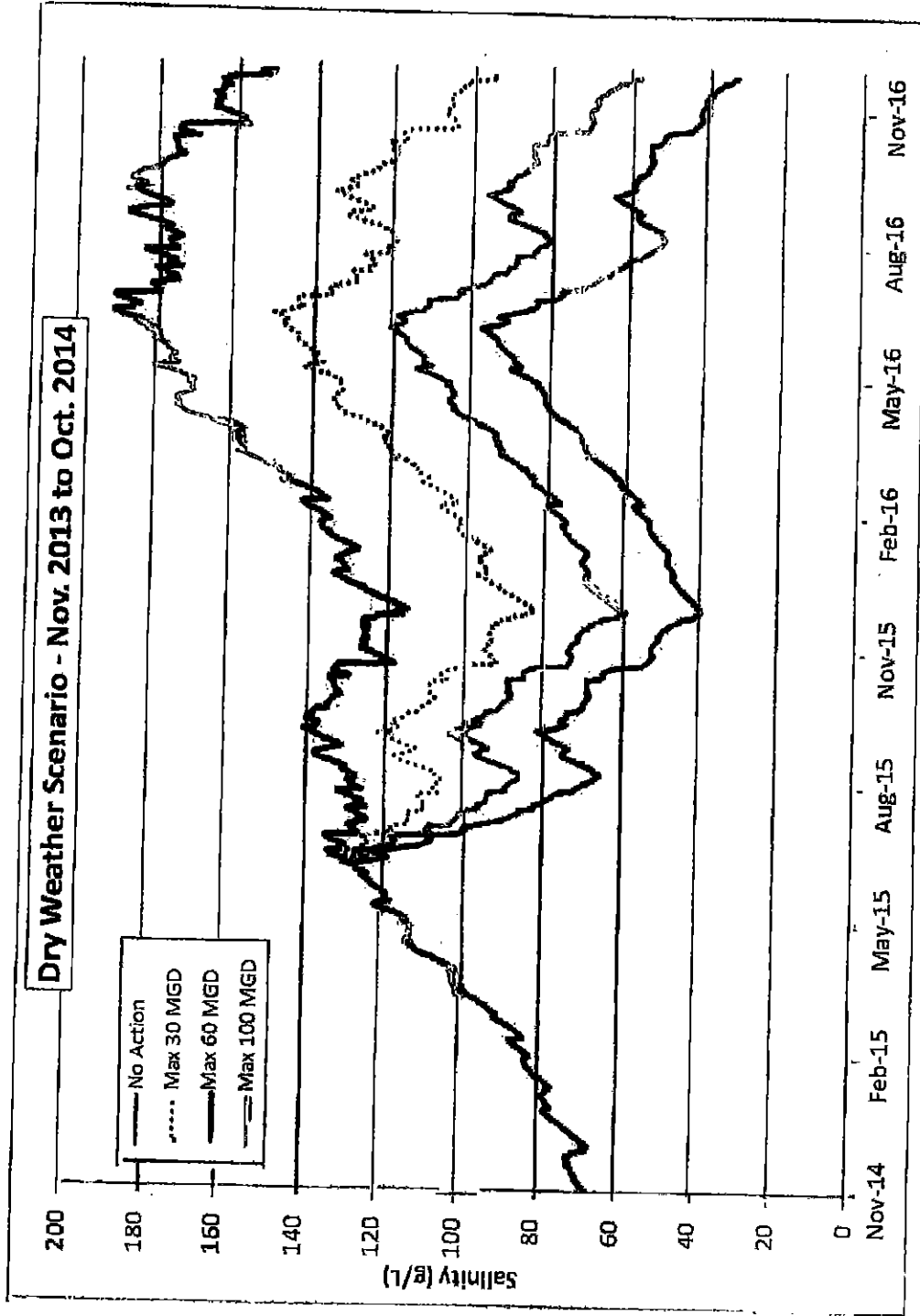


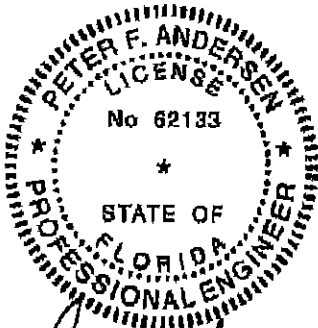
Figure 8. Simulated CCS salinities for predictive Scenario B base case and the constrained L-31E allocations

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## CERTIFICATION

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The work documented in this memorandum has been performed by or under the direct supervision of the undersigned Florida Registered Professional Engineer. Either I or engineering staff working under my supervision completed all work described herein and I have expertise in the discipline used in the production of this document. This report has been prepared in accordance with commonly accepted procedures consistent with applicable standards of practice, and is not a guaranty or warranty, either expressed or implied.



Peter F. Andersen  
Principal Engineer  
Registered Professional Engineer  
Florida License No. 62133

Date: 3/13/2015

### **NOTICE OF RIGHTS**

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

#### **RIGHT TO REQUEST ADMINISTRATIVE HEARING**

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which does or may affect their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

#### **FILING INSTRUCTIONS**

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing.** To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the District Clerk's Office at [clerk@sfwmd.gov](mailto:clerk@sfwmd.gov). The filing date for a document transmitted by electronic mail shall be the date the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

### **INITIATION OF AN ADMINISTRATIVE HEARING**

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency decision.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the SFWMD takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

### **MEDIATION**

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

### **RIGHT TO SEEK JUDICIAL REVIEW**

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the District Clerk within 30 days of rendering of the final SFWMD action.

**Attachment E**

**SFWMD Standard Permit No. 14429**



**SFWMD STANDARD PERMIT NO. 14429**  
(NON-ASSIGNABLE)

DATE ISSUED: April 6, 2016

AUTHORIZING: PLACEMENT OF TWO (2) TEMPORARY PUMPING FACILITIES (PIPES, PUMPS AND RELATED EQUIPMENT) WITHIN THE EAST RIGHT OF WAY OF L-31E, ONE IMMEDIATELY NORTH OF SW 344TH STREET (PALM DRIVE) AND ONE APPROXIMATELY 1 MILE SOUTH AND ADJACENT TO SW 359TH STREET FOR WET SEASON TRANSFER OF WATER INTO THE FPL COOLING CANAL SYSTEM.

LOCATED IN: MIAMI-DADE COUNTY, SECTION 29 TOWNSHIP 57S RANGE 40E

ISSUED TO: FLORIDA POWER & LIGHT COMPANY  
700 UNIVERSE BOULEVARD  
JUNO BEACH, FL 33408

Attention: MATTHEW RAFFENBURG

This permit is issued pursuant to Application No. 16-0123-2 dated January 23, 2016 and permittee's agreement to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, maintenance, or use of the work or structure involved in the Permit. Said application, including all plans and specifications attached thereto, is by reference made a part hereof. The permittee, by acceptance of this permit, hereby agrees that he/she shall promptly comply with all orders of the District and shall alter, repair or remove his/her use solely at his/her expense in a timely fashion. Permittee shall comply with all laws and rules administered by the District. This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation, or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit is issued by the District as a revocable license to use or occupy District works or lands. It does not create any right or entitlement, either legal or equitable, to the continued use of the District works or lands. Since this permit conveys no right to the continued use of the District works or lands, the District is under no obligation to transfer this permit to any subsequent party. By acceptance of this permit, the permittee expressly acknowledges that the permittee bears all risk of loss as a result of revocation of this permit.

WORK PROPOSED MUST BE COMPLETED ON OR BEFORE December 30, 2016. Otherwise, this permit is void and all rights thereunder are automatically canceled unless permittee applies for, in writing, a request for extension to the construction period and such request is received by the District on or before the expiration date and such request is granted, in writing, by the District.

SPECIAL CONDITIONS (SPECIFIC PROJECT CONDITIONS) AND LIMITING CONDITIONS ON ATTACHED SHEETS ARE A PART OF THIS DOCUMENT.

FILED ON April 9, 2015

BY Daniel Boyar  
DEPUTY CLERK

Original Mailed to Permittee on 4-9-15 by Elin Cueto

C: Eric Fryar  
HOMESTEAD FIELD STATION  
(305) 242-5933, Extension 7008

**PERMIT NO. 14429**

April 9, 2015

**SPECIAL CONDITIONS ARE AS FOLLOWS:**

1. AT LEAST ONE WEEK PRIOR TO THE DEPLOYMENT OF THE AUTHORIZED TEMPORARY PUMPING FACILITIES AND RELATED EQUIPMENT OR UTILIZATION OF THE DISTRICT'S RIGHT OF WAY, THE PERMITTEE IS REQUIRED TO CONTACT THE DISTRICT'S FIELD REPRESENTATIVE LISTED ON THE FACE OF THIS PERMIT AND SCHEDULE A PRE-CONSTRUCTION MEETING. SAID PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED PRIOR TO THE BEGINNING OF EACH WET SEASON (JUNE 1, 2015 AND JUNE 1, 2016) AND PRIOR TO DEPLOYMENT OF PUMPING FACILITIES.
2. PERMITTEE SHALL PREPARE AND PRESENT AT THE PRE-CONSTRUCTION MEETING REFERENCED ABOVE: A. A LIST OF 24 HOUR CONTACT PERSONNEL. THE LIST SHALL INCLUDE THE CONTRACTOR AND SHIFT PUMP OPERATORS, THEIR TITLES AND THE FOLLOWING NUMBERS FOR OFFICE, MOBILE, BEEPER, HOME OR LOCAL RESIDENCES. B. A WRITTEN INVENTORY OF THE TYPE OF VEHICLES, CONSTRUCTION EQUIPMENT, OTHER MACHINERY AND MATERIALS WHICH WILL BE LOCATED WITHIN THE DISTRICT'S RIGHT OF WAY. C. WRITTEN PROCEDURES FOR THE REMOVAL OF ALL CONSTRUCTION MATERIALS, MACHINERY, EQUIPMENT AND VEHICLES FROM THE CANAL AND THE AREA IMMEDIATELY ADJACENT TO THE CANAL WITHIN 24 HOURS NOTICE FROM THE DISTRICT. D. A LIST CONTAINING THE NAMES AND CONTACT NUMBERS OF THE INDIVIDUALS RESPONSIBLE FOR THE REMOVAL SET FORTH IN CONDITION 2 (C).
3. IMMEDIATELY UPON COMPLETION OF THE INSTALLATION OF THE AUTHORIZED TEMPORARY PUMPING FACILITIES AT THE ONSET OF EACH WET SEASON (JUNE 1, 2015 AND JUNE 1, 2016) THE PERMITTEE SHALL CONTACT THE DISTRICT'S FIELD REPRESENTATIVE LISTED ON THE FACE OF THIS PERMIT SO THAT AN INTERIM INSPECTION MAY BE SCHEDULED.
4. PERMITTEE SHALL, UPON TERMINATION OF TEMPORARY PUMPING AT THE END OF EACH WET SEASON (NOVEMBER 30, 2015 AND NOVEMBER 30, 2016), CONTACT THE DISTRICT'S FIELD REPRESENTATIVE LISTED ON THE FACE OF THIS PERMIT TO SCHEDULE A FINAL INSPECTION. PERMITTEE SHALL REMOVE ALL TEMPORARY PUMPING FACILITIES (PIPES, PUMPS AND RELATED EQUIPMENT) AND RESTORE THE L-31E RIGHT OF WAY TO THE DISTRICT'S SATISFACTION WITHIN 30 DAYS OF TERMINATION OF WET SEASON PUMPING AS PRESCRIBED BY FINAL ORDER SPWMD NO. 2015-20-DAO-WU. UPON TERMINATION OF THE 2016 WET SEASON PUMPING (NOVEMBER 30, 2016) PERMITTEE SHALL ALSO INCLUDE THE REMOVAL OF THE THREE (3) 30" PIPE CULVERTS THROUGH SW 344 STREET (PALM DRIVE) AND RESTORATION OF THE AREA TO THE DISTRICT'S SATISFACTION.
5. THE ISSUANCE OF THIS PERMIT IS SUBJECT TO AND CONTINGENT UPON APPROVAL OF FINAL ORDER SPWMD NO. 2015-20-DAO-WU FROM THE DISTRICT'S GOVERNING BOARD. THIS PERMIT IS SUBJECT TO THE QUANTITIES, REGULATORY REQUIREMENTS AND TIMEFRAMES FOR OPERATION AND TERMINATION OF THE TEMPORARY PUMPING SPECIFIED UNDER SAID FINAL ORDER.
6. WITH THE EXCEPTION OF THE AUTHORIZED TEMPORARY DUAL 36" PIPE CROSSING L-31E ADJACENT TO SW 359 STREET, PERMITTEE SHALL ENSURE THAT THE DISTRICT'S LEVEE ROAD IS ACCESSIBLE AT ALL TIMES FOR INSPECTIONS, OPERATIONS AND MAINTENANCE.
7. IF STORM, HURRICANE OR EMERGENCY CIRCUMSTANCES ARE DEVELOPING, THE DISTRICT WILL ATTEMPT TO PROVIDE A FORTY-EIGHT (48) HOUR NOTICE. THE PERMITTEE WILL BE CONTACTED BY TELEPHONE OR A VISIT TO THE CONSTRUCTION SITE WHEREIN THE PERMITTEE WILL BE INFORMED OF THE EMERGENCY SITUATION. THE PERMITTEE IS PUT ON NOTICE THAT THE 48-HOUR NOTICE IS A WARNING THAT THE DISTRICT MAY OR MAY NOT BE ABLE TO COMMUNICATE TO THE PERMITTEE.
8. IF STORM, HURRICANE OR EMERGENCY CIRCUMSTANCES HAVE DEVELOPED, THE DISTRICT WILL CALL BY TELEPHONE OR VISIT THE SITE TO PLACE THE PERMITTEE ON A 24-HOUR ALERT. AT THIS TIME THE PERMITTEE AND THE PERMITTEE'S CONTRACTOR(S) AND SUB-CONTRACTOR(S) MUST BEGIN SECURING THE PROJECT SITE PER THE DISTRICT APPROVED CONTINGENCY PLANS.
9. IT SHOULD BE NOTED THAT THE DISTRICT'S HURRICANE, STORM EVENT AND/OR EMERGENCY ALERT MAY DIFFER FROM THE NATIONAL HURRICANE CENTER OR THE LOCAL NEWS AND WEATHER. THE DISTRICT TAKES INTO CONSIDERATION THE NUMEROUS FACTORS CONCERNING CONSTRUCTION WITHIN THE CHANNEL AND CANAL RIGHTS OF WAY. AS SUCH, UPON THE DISTRICT'S NOTIFICATION TO THE PERMITTEE OF A PENDING EMERGENCY, STORM EVENT OR HURRICANE, THE PERMITTEE HAS TWENTY-FOUR (24) HOURS OR LESS TO COMPLY WITH DISTRICT ORDERS AND THE PREVIOUSLY SUBMITTED DISTRICT APPROVED CONTINGENCY PLAN.
10. IN THE EVENT OF A STORM OR OTHER EMERGENCY, PERMITTEE SHALL WITHIN 24 HOURS NOTICE FROM THE DISTRICT DISCONNECT AND REMOVE THE TWO (2) 36" PIPES CROSSING THE L-31E SHOULD THE DISTRICT REQUIRE UNIMPEDED ACCESS ALONG THE LEVEE.
11. THE NURSE/FUEL TANKS SHOWN ON THE PERMIT DRAWINGS SHALL INCORPORATE DOUBLE WALL CONSTRUCTION AND ADDITIONAL SECONDARY CONTAINMENT, AND BE SET AWAY FROM THE CANAL BANK ADJACENT TO THE LEVEE TOE. A COPY OF PERMITTEE'S PUMPING AND SITE MANAGEMENT PLAN, WHICH CONTAINS PROCEDURES AND CONTACT INFORMATION FOR SPILL RESPONSE AND CONTAINMENT (SECTION 2.0 PRECAUTIONS AND LIMITATIONS), SHALL BE KEPT AT EACH PUMPING FACILITY AT ALL TIMES ALONG WITH SPILL KITS NECESSARY FOR RAPID CONTAINMENT OF A FUEL LEAK OR SPILL.

**PERMIT NO. 14429**

April 9, 2015

**CONTINUED SPECIAL CONDITIONS ARE AS FOLLOWS:**

12. PERMITTEE SHALL BE RESPONSIBLE FOR LOCKING THE DISTRICT'S ACCESS GATE UPON ENTERING AND LEAVING THE DISTRICT'S RIGHT OF WAY. PERMITTEE SHALL TAKE ALL NECESSARY MEASURES TO PRECLUDE THE GENERAL PUBLIC FROM ACCESSING THE RIGHT OF WAY WITH MOTORIZED VEHICLES.
13. THE PERMITTEE SHALL BE RESPONSIBLE FOR POSTING A WATCHMAN AT THE DISTRICT'S VEHICULAR ACCESS GATE DURING ANY WORKING HOURS THAT THE GATE REMAINS OPEN. AT NO TIME SHALL AN OPEN DISTRICT GATE BE LEFT UNATTENDED.
14. THE PERMITTEE SHALL UTILIZE TURBIDITY SCREENS DURING CONSTRUCTION ACTIVITY IN CONFORMANCE WITH APPLICABLE REGULATIONS.
15. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF SILT BARRIERS LOCATED WITHIN THE CANAL WITHIN 48 HOURS NOTICE FROM THE DISTRICT. IF, IN THE DISTRICT'S OPINION, STORM CONDITIONS OR EMERGENCY CIRCUMSTANCES ARE DEVELOPING, THE REMOVAL OF THE SILT BARRIERS SHALL BE COMPLETED WITHIN 12 HOURS OF NOTICE FROM THE DISTRICT.
16. PERMITTEE SHALL BE RESPONSIBLE FOR THE ROUTINE LEVEE MAINTENANCE, SUCH AS, BUT NOT LIMITED TO EROSION CONTROL AND MOWING OF THE OVERBANK AND SIDE SLOPES WITHIN A 25 TO 50 FOOT RADIUS OF EACH PUMPING STATION.
17. THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN THE DISTRICT'S RIGHT OF WAY: VEHICULAR MAINTENANCE/REPAIR ACTIVITIES OR PLACEMENT OF SUBSTANCES OR PARTS ASSOCIATED WITH THE REPAIR OR MAINTENANCE OF VEHICLES/EQUIPMENT AND THE STORAGE OR PARKING OF EQUIPMENT, ASSOCIATED MACHINERY OR CONSTRUCTION TRAILERS.
18. AT NO TIME SHALL THE CANAL BE BLOCKED OR FLOWS OTHERWISE RESTRICTED OR IMPEDED. THIS SHALL INCLUDE A PROHIBITION ON DAMS OR FILL BEING PLACED IN THE CANAL DURING ALL PHASES OF CONSTRUCTION AND MAINTENANCE.
19. PERMITTEE SHALL BE RESPONSIBLE FOR ALL REMOVAL AND RESTORATION COSTS, INVESTIGATIVE COSTS, COURT COSTS AND REASONABLE ATTORNEY'S FEES, INCLUDING APPEALS, RESULTING FROM ANY ACTION TAKEN BY THE DISTRICT TO OBTAIN COMPLIANCE WITH THE CONDITIONS OF THIS PERMIT OR REMOVAL OF THE AUTHORIZED USE. IF DISTRICT LEGAL ACTION IS TAKEN BY STAFF COUNSEL, "REASONABLE ATTORNEY'S FEES" IS UNDERSTOOD TO MEAN THE FAIR MARKET VALUE OF THE SERVICES PROVIDED, BASED UPON WHAT A PRIVATE ATTORNEY WOULD CHARGE.
20. PERMITTEE BEARS ALL RISK OF LOSS AS TO MONIES EXPENDED IN FURTHERANCE OF THIS PERMIT.
21. THIS TEMPORARY AUTHORIZATION SHALL BE RESTRICTED TO THE USE OF THE PERMITTEE AND THE PERMITTEE'S CONTRACTOR(S)/SUB-CONTRACTOR(S) ONLY.
22. BASED ON THE DISTRICT'S RECORDS, THE DISTRICT IS NOT THE UNDERLYING FEE OWNER OF PORTIONS OF OR ALL THE LANDS SUBJECT TO THIS PERMIT; THEREFORE, YOU ARE REQUIRED TO OBTAIN ALL NECESSARY APPROVALS FROM THE UNDERLYING FEE OWNER AS REQUIRED UNDER STANDARD LIMITING CONDITION NO. 5.
23. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO MAKE PROSPECTIVE BIDDERS AWARE OF THE TERMS AND CONDITIONS OF THIS PERMIT. IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE'S CONTRACTORS TO UNDERSTAND THE TERMS AND CONDITIONS OF THIS PERMIT AND GOVERN THEMSELVES ACCORDINGLY.
24. THE PERMITTEE IS PUT ON NOTICE THAT PRIOR TO THE PLACEMENT OF ADDITIONAL FACILITIES OR ALTERATIONS TO EXISTING FACILITIES OTHER THAN THOSE AUTHORIZED BY THIS PERMIT, A MODIFICATION OF THIS PERMIT WILL FIRST BE REQUIRED.
25. THIS PERMIT SHALL NOT BECOME VALID UNTIL ALL OTHER REQUIRED SOUTH FLORIDA WATER MANAGEMENT DISTRICT, LOCAL COUNTY AND/OR STATE PERMITS OR OTHER AFFECTED PARTIES' APPROVALS HAVE BEEN OBTAINED. THE PERMITTEE SHALL COMPLY WITH ANY MORE STRINGENT CONDITIONS SET FORTH IN OTHER REQUIRED PERMITS AND APPROVALS.
26. A COPY OF THE PERMIT PACKAGE WILL BE KEPT AT THE JOB SITE UNTIL COMPLETION OF ALL PHASES OF CONSTRUCTION AND ACCEPTANCE OF THE CONSTRUCTED FACILITIES AND RESTORATION OF THE RIGHT OF WAY BY THE DISTRICT'S FIELD REPRESENTATIVE.
27. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION MATERIALS AND DEBRIS FROM THE DISTRICT'S CANAL AND RIGHT OF WAY; AND, FOR THE REPAIR, REPLACEMENT AND RESTORATION OF ANY SECTIONS OF THE DISTRICT'S RIGHT OF WAY DAMAGED OR DISTURBED RESULTING FROM THE AUTHORIZED ACTIVITY. RESTORATION SHALL BE TO THE SATISFACTION OF THE DISTRICT AND MAY INCLUDE PLACEMENT OF FILTER FABRIC CLOTH, RIP-RAP AND/OR GRADING/RE-SHAPING, SEEDING, RE-SODDING WITH ARGENTINE BAHIA GRASS OR OTHER SPECIES RECOGNIZED BY THE DISTRICT AS DROUGHT TOLERANT.
28. SHOULD THE AUTHORIZED ACTIVITIES OR PLACEMENT OF THE AUTHORIZED FACILITIES WITHIN THE DISTRICT'S RIGHT OF WAY OR MAINTENANCE OF SAME ATTRIBUTE TO SHOALING, EROSION OR WASH-OUTS OF THE

# **PERMIT NO. 14429**

**April 9, 2015**

## **CONTINUED SPECIAL CONDITIONS ARE AS FOLLOWS:**

DISTRICT'S RIGHT OF WAY, BERM OR SIDE SLOPE OF THE CANAL, IT IS THE PERMITTEE'S SOLE RESPONSIBILITY AND EXPENSE TO, UPON NOTIFICATION FROM THE DISTRICT, IMMEDIATELY TAKE APPROPRIATE STEPS TO RESTORE THE RIGHT OF WAY TO THE SATISFACTION OF THE DISTRICT.

29. AT NO TIME SHALL THE PERMITTEE PLACE PERMANENT OR SEMI-PERMANENT ABOVE-GROUND ENCROACHMENTS OR FACILITIES WITHIN ANY PORTION OF THE DISTRICT'S RIGHT OF WAY INCLUDING AND NOT LIMITED TO THE 40 FOOT WIDE STRIP OF LAND LYING PARALLEL TO THE CANAL AS MEASURED FROM THE TOP OF THE EXISTING CANAL BANK LANDWARD, UNLESS OTHERWISE SPECIFICALLY AUTHORIZED IN THIS PERMIT.
30. THE PERMITTEE IS PUT ON NOTICE THAT THE DISTRICT HAS NO CONTROL OVER THE SALE OR TRANSFER OF REAL OR PERSONAL PROPERTY. THEREFORE, IT IS THE SOLE OBLIGATION OF A PERMITTEE TO DISCLOSE THE EXISTENCE OF THIS RIGHT OF WAY OCCUPANCY PERMIT, INCLUDING ITS TERMS AND CONDITIONS TO PROSPECTIVE PURCHASERS. UPON CONVEYANCE OF THE PROPERTY, THE NEW OWNER MUST SUBMIT A WRITTEN REQUEST THAT THE DISTRICT TRANSFER THE PERMIT INTO HIS/HER NAME(S).
31. THIS PERMIT SHALL EXPIRE ON ITS OWN TERMS ON DECEMBER 30, 2016.

**END.**

#### 40E-6.381 LIMITING CONDITIONS

The District's authorization to utilize lands and other works constitutes a revocable license (including both notice general permits and standard permits). In consideration for receipt of that license, permittees shall agree to be bound by the following standard limiting conditions, which shall be included within all permits issued pursuant to this chapter:

- 1) All structures on District works or lands constructed by permittee shall remain the property of permittee, who shall be solely responsible for ensuring that such structures and other uses remain in good and safe condition. Permittees are advised that other federal, state and local safety standards may govern the occupancy and use of the District's lands and works. The District assumes no duty with regard to ensuring that such uses are so maintained and assumes no liability with regard to injuries caused to others by any such failure.
- 2) Permittee solely acknowledges and accepts the duty and all associated responsibilities to incorporate safety features, which meet applicable engineering practice and accepted industry standards, into the design, construction, operation and continued maintenance of the permitted facilities/authorized use. This duty shall include, but not be limited to, permittee's consideration of the District's regulation and potential fluctuation, without notice, of water levels in canals and works, as well as the permittee's consideration of upgrades and modifications to the permitted facilities/authorized use which may be necessary to meet any future changes to applicable engineering practice and accepted industry standards. Permittee acknowledges that the District's review and issuance of this permit, including, but not limited to, any field inspections performed by the District, does not in any way consider or ensure that the permitted facilities/authorized use is planned, designed, engineered, constructed, or will be operated, maintained or modified so as to meet applicable engineering practice and accepted industry standards, or otherwise provide any safety protections. Permittee further acknowledges that any inquiries, discussions, or representations, whether verbal or written, by or with any District staff or representative during the permit review and issuance process, including, but not limited to, any field inspections, shall not in any way be relied upon by permittee as the District's assumption of any duty to incorporate safety features, as set forth above, and shall also not be relied upon by permittee in order to meet permittee's duty to incorporate safety features, as set forth above.
- 3) Permittee agrees to abide by all of the terms and conditions of this permit, including any representations made on the permit application and related documents. This permit shall be subject to the requirements of Chapter 373, F.S., and Chapter 40E-6, F.A.C., including all subsequent rule and criteria revisions. Permittee agrees to pay all removal and restoration costs, investigative costs, court costs and reasonable attorney's fees, including appeals, resulting from any action taken by the District to obtain compliance with the conditions of the permit or removal of the permitted use. If District legal action is taken by staff counsel, "reasonable attorney's fees" is understood to mean the fair market value of the services provided, based upon what a private attorney would charge.
- 4) This permit does not create any vested rights, and except for governmental entities and utilities, is revocable at will upon reasonable prior written notice. Permittee bears all risk of loss as to monies expended in furtherance of the permitted use. Upon revocation, the permittee shall promptly modify, relocate or remove the permitted use and properly restore the right of way to the District's satisfaction. In the event of failure to so comply within the specified time, the District may remove the permitted use and permittee shall be responsible for all removal and restoration costs.
- 5) This permit does not convey any property rights nor any rights or privileges other than those specified herein and this permit shall not, in any way, be construed as an abandonment or any other such impairment or disposition of the District's property rights. The District approves the permitted use only to the extent of its interest in the works of the District. Permittee shall obtain all other necessary federal, state, local, special district and private authorizations prior to the start of any construction or alteration authorized by the permit. Permittee shall comply with any more stringent conditions or provisions which may be set forth in other required permits or other authorizations. The District, however, assumes no duty to ensure that any such authorizations have been obtained or to protect the legal rights of the underlying fee owner, in those instances where the District owns less than fee.
- 6) Unless specifically prohibited or limited by statute, Permittee agrees to indemnify, defend and save the District (which used herein includes the District and its past, present and/or future employees, agents, representatives, officers and/or Governing Board members and any of their successors and assigns) from and against any and all lawsuits, actions, claims, demands, losses, expenses, costs, attorneys fees (including but not limited to the fair market value of the District's in-house attorneys' fees based upon private attorneys' fees/rates), judgments and liabilities which arise from or may be related to the ownership, construction, maintenance or operation of the permitted use or the possession, utilization, maintenance, occupancy or ingress and egress of the District's right of way which arise directly or indirectly and are caused in whole or in part by the acts, omissions or negligence of the Permittee or of third parties. Permittee agrees to provide legal counsel acceptable to the District if requested for the defense of any such claims.
- 7) The District does not waive sovereign immunity in any respect.
- 8) The permittee shall not engage in any activity regarding the permitted use which interferes with the construction, alteration, maintenance or operation of the works of the District, including:
  - a) discharge of debris or aquatic weeds into the works of the District;
  - b) causing erosion or shoaling within the works of the District;
  - c) planting trees or shrubs or erecting structures which limit or prohibit access by District equipment and vehicles, except as may be authorized by the permit. Permittee shall be responsible for any costs incurred by the District resulting from any such interference, as set forth in (a), (b), and (c), above. Permittee shall be responsible for any costs incurred by the District resulting from any such interference, as set forth in a), b), and c), above;
  - d) leaving construction or other debris on the District's right of way or waterway;
  - e) damaging District berms and levees;

- f) the removal of District owned spoil material;
- g) removal of or damage to District locks, gates, and fencing;
- h) opening of District rights of way to unauthorized vehicular access; or
- i) running or allowing livestock on the District's right of way.

9) The District is not responsible for any personal injury or property damage which may directly or indirectly result from the use of water from the District's canal or any activities which may include use or contact with water from the District's canal, since the District periodically sprays its canals for aquatic weed control purposes and uses substances which may be harmful to human health or plant life.

10) Permittee shall allow the District to inspect the permitted use at any reasonable time.

11) Permittee shall allow, without charge or any interference, the District, its employees, agents, and contractors, to utilize the permitted facilities before, during and after construction for the purpose of conducting the District's, routine and emergency, canal operation, maintenance, and construction activities. To the extent there is any conflicting use, the District's use shall have priority over the permittee's use.

12) This permit is a non-exclusive revocable license. Permittee shall not interfere with any other existing or future permitted uses or facilities authorized by the District.

13) The District has the right to change, regulate, limit, schedule, or suspend discharges into, or withdrawals from, works of the District in accordance with criteria established by the Big Cypress Basin, the District, or the U. S. Army Corps of Engineers for the works of the District.

14) If the use involves the construction of facilities for a non exempt water withdrawal or surface water discharge, the applicant must apply for and obtain a water use or surface water management permit before or concurrently with any activities which may be conducted pursuant to the right of way occupancy permit.

15) The District shall notify the local ad valorem taxing authority of the lands affected by the permitted use, where the permittee owns the underlying fee and derives a substantial benefit from the permitted use. The taxing authority may reinstate such lands on the tax roll. Failure to pay all taxes in a timely manner shall result in permit revocation. Such permit revocation shall not alleviate the responsibility of the permittee to pay all taxes due and payable.

16) Permittee shall provide prior written notice to their successors in title of the permit and its terms and conditions.

17) Permittee authorizes the District to record a Notice of Permit through filing the appropriate notice in the public records of the county or counties where the project is located. Governmental entities and utilities are not subject to this provision.

18) Permittee shall be responsible for the repair or replacement of any existing facilities located within the District's right of way which are damaged as a result of the installation or maintenance of the authorized facility.

19) All obligations under the terms of this permit authorization and any subsequent modifications hereto shall be joint and several as to all owners.

20) It is the responsibility of the permittee to make prospective bidders aware of the terms and conditions of this permit. It shall be the responsibility of the permittee's contractors to understand the terms and conditions of this permit and govern themselves accordingly.

21) It is the responsibility of the permittee to bring to the attention of the District any conflict in the permit authorization or permit conditions in order that they may be resolved prior to the start of construction. In resolving such conflicts the District's determination will be final.

22) Special Conditions that are site specific shall be incorporated into every permit as may be necessary in the best interest of the District.

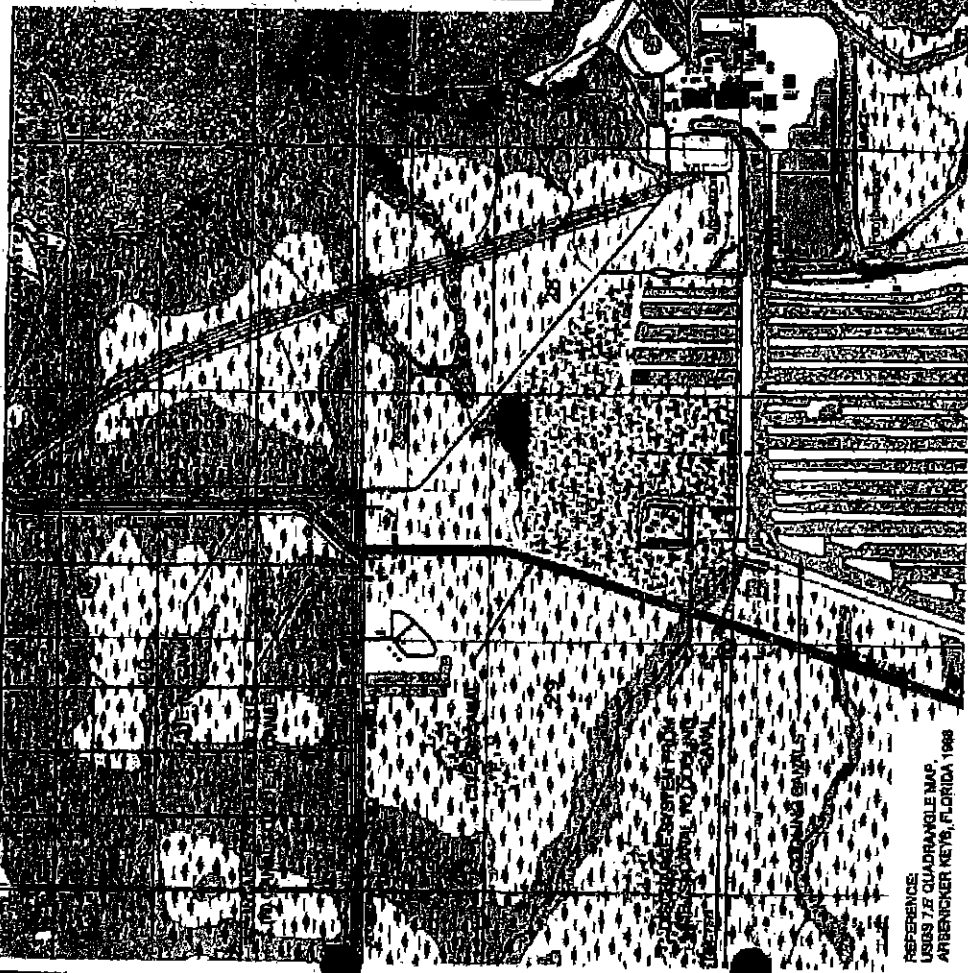
23) The District is not responsible for the repair of or claims of damage to any facilities and uses which may incur damage resulting from the District's utilization of its rights of way or use by third parties. Improvements placed within the right of way are done so at the sole risk of the owner.

Rulemaking Authority 373.044, 373.113 FS. Law Implemented 373.085(1), 373.086, 373.103, 373.109, 373.129, 373.1395, 373.603, 373.609, 373.613 FS. History—New 9-3-81, Formerly 16K-5.01(2), 16K-5.02(2), 16K-5.03(2), 16K-5.04(4), 16K-5.05, Amended 5-30-82, 12-29-86, 12-24-91, 9-15-99

**DRAWING INDEX**

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**TAYLOR ENGINEERING INC.**  
10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF REGISTRATION 44410

**FIGURE 1**  
LOCATION MAP  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2013-024  
SECTION: QAS  
SHEET: 1 of 23  
DATE: 08-11-16

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

# PUMPING DESCRIPTION, MONITORING, AND CONTROL PLAN

1. BRIDGE OVER PILES ON LEVEE WITH CONCRETE BOX CULVERT DESIGN AND SOIL RAMPS. NO MODIFICATION TO THE DAM WILL BE REQUIRED.
2. A PRE-CONSTRUCTION SURVEY OF THE DAM CREST WILL BE PERFORMED BEFORE BRIDGE INSTALLATION AND DAM CREST WILL BE RESTORED TO AS GOOD AS OR BETTER CONDITION WHEN THE BRIDGE IS REMOVED.
3. PRIOR TO COMMENCEMENT OF CONSTRUCTION WITHIN ANY SOUTH FLORIDA WATER MANAGEMENT DISTRICT (THE DISTRICT) RIGHT OF WAY (ROW), FPL SHALL CONTACT THE DISTRICT'S FIELD REPRESENTATIVE AT THE HOMESTEAD FIELD STATION TO SCHEDULE A PRE-CONSTRUCTION MEETING AND FINAL INSPECTION.
4. FPL SHALL COMPLY WITH THE FOLLOWING ROW CONDITIONS:
  - A. ALL EQUIPMENT SHALL BE SKID MOUNTED OR LIE ABOVE GROUND AND BE CAPABLE OF BEING REMOVED FROM THE DISTRICT'S ROW WITHIN 24 HOURS OF THE DISTRICT'S REQUEST TO DO SO.
  - B. THE HDPE PILES BURIED UNDER 344TH AVE SHALL BE BLANKED AT THE NORTH END, BUT LEFT IN PLACE IN THE EVENT OF DISTRICT NOTIFICATION TO REMOVE EQUIPMENT.
  - C. THE HDPE PILES BETWEEN THE L-31E CANAL AND THE SOUTH PUMPING STATION SHALL BE BLANKED AT THE CANAL END, BUT LEFT IN PLACE IN THE EVENT OF DISTRICT NOTIFICATION TO REMOVE EQUIPMENT WITHIN 24 HOURS. THESE PILES AND BRIDGING SHALL BE CAPABLE OF BEING REMOVED FROM THE DISTRICT'S ROW WITHIN 30 DAYS OF THE DISTRICT'S REQUEST TO DO SO.
  - D. ALL DISTRICT ROWS SHALL REMAIN IN A CONDITION TO ALLOW ACCESS FOR DISTRICT'S NORMAL AND EMERGENCY USE AT ALL TIMES.
5. FPL'S MONITORING AND CONTROL PLAN FOR PUMPING OPERATIONS SHALL COMPLY WITH THE FOLLOWING CONSTRAINTS:
  - A. THE PUMPS AND POWERPACK AT THE L-31E WITHDRAWAL LOCATION NORTH OF 344TH AVE (THE NORTH STATION) SHALL BE MANNED CONTINUOUSLY DURING PUMPING OPERATIONS.
  - B. THE PUMPS AT THE SOUTHERN WITHDRAWAL LOCATION (APPROXIMATELY ONE MILE SOUTH OF 344TH AVE) SHALL BE MANNED CONTINUOUSLY.
  - C. PERSONNEL AT BOTH PUMP LOCATIONS WILL BE PROVIDED CONTACT INFORMATION, MEANS OF COMMUNICATION, AND TRAINING TO UTILIZE THE EMERGENCY RESPONSE TEAM AT THE TURKEY POINT FACILITY.
  - D. THE PUMPS AT THE SOUTHERN WITHDRAWAL LOCATION SHALL BE INSTALLED, MANNED AND OPERATED BY TRAINED PERSONNEL FROM THE PUMP SUPPLIER.
  - E. EACH DAY PRIOR TO 10AM, THE FPL OPERATORS SHALL CONTACT THE DISTRICT'S

OPERATION CONTROL CENTER, VIA EMAIL, TO DETERMINE THE RATE AND VOLUME OF FPL WITHDRAWALS FOR THE 24-HOUR PERIOD FROM 10AM TO 959AM THE FOLLOWING CALENDAR DAY.

- F. FPL SHALL MONITOR PUMP STARTS AND PUMP STOPS AT BOTH PUMPING LOCATIONS (NORTH STATION AND SOUTH STATION). FPL SHALL ALSO MONITOR AND DATA LOG FLOW RATES OF THE L-31E WATER PUMPED AT BOTH LOCATIONS.
- G. FPL SHALL GENERATE A WEEKLY REPORT, DELIVERED VIA EMAIL BY NOON TUESDAY, WHICH REPORTS THE FOLLOWING TO THE DISTRICT FOR THE PRECEDING WEEK:
  - A. ID OF PUMPS THAT RAN
  - B. ON AND OFF TIMES FOR EACH PUMP
  - C. RPM SETTING, PER PUMP, IF VARIABLE
  - D. CALCULATED VOLUME OF WATER PER PUMP
  - E. LOGGED FLOWS AT EACH PUMP STATION, FROM TOTALIZING HOUR FLOW METERS.
  - F. THE OFFICIAL TUESDAY REPORTS SHALL BE SENT FROM MATTHEW RAFFENBERG@FPL.COM (OR DELEGATE) TO BOTH LUNDAHL@SPFLMWD.GOV AND TO TBATES@SPFLMWD.GOV FOR THEIR DELEGATES.
- H. FPL SHALL BE CAPABLE OF SUPPLYING THE ABOVE DATA UPON REQUEST AT ANY TIME BETWEEN TUESDAY REPORTS. WITHIN 2 HOURS OF THE DISTRICT'S REQUEST:
  1. FPL SHALL BE CAPABLE OF TERMINATING ALL PUMPING AT ANY TIME. WITHIN 2 HOURS AN EMAILED REQUEST FROM EITHER DISTRICT PARTY IDENTIFIED IN § G F EACH PUMP SHALL BE OPERATED BY TRAINED PUMP OPERATORS WHICH WILL BE ON SITE 24 HOURS PER DAY DURING OPERATION. THE PUMP OPERATORS WILL HAVE WIRELESS COMMUNICATION TO PROVIDE IMMEDIATE RESPONSE IF REQUIRED AND THIS SHALL BE VERIFIED AS OPERABLE PRIOR TO PUMPING.
  - K. FPL SHALL WIRELESSLY COORDINATE THE PUMPING AT BOTH STATIONS TO ASSURE THAT:
    - a. FROM A NON-FLOW CONDITION, THE NORTH STATION PUMPS SHALL BE STARTED FIRST
    - b. FROM A FLOW CONDITION, THE SOUTH STATION PUMPS SHALL BE STOPPED FIRST.
    - c. SOUTH STATION PUMPS SHALL BE STARTED AFTER 5 MINUTES OR MORE OF NORTH STATION PUMPS STARTS, WITH EQUIVALENT FLOW MAINTAINED AT

## TAYLOR ENGINEERING INC.

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32258  
CERTIFICATE OF AUTHORIZATION #11818

## FIGURE 2 PROJECT NOTES

FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2016-034	REV.
DRAWN BY	CAS	
CHECKED	2 of 23	
DATE	03-11-15	

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

# PUMPING DESCRIPTION, MONITORING, AND CONTROL PLAN (CONT)

## BOTH STATIONS DURING OPERATION.

- d. NORTH STATION PUMPS SHALL BE STOPPED AFTER 5 MINUTES OR MORE FOLLOWING SOUTH STATION PUMPS' STOPS.
- e. FPL SHALL PROVIDE THE PUMP CURVES USED TO DETERMINE DISCHARGE RATES TO THE DISTRICT, FOR EACH PUMP, PRIOR TO THEIR OPERATION.
- f. FPL SHALL MONITOR THE CANAL WATER LEVEL UTILIZING STAFF GAUGES TO ASSURE THAT UNDER NO CONDITIONS, THE WATER LEVEL IN THE SOUTH END OF THE L-31E CANAL IS LOWER THAN THE POINT AT WHICH THE PUMPS ARE FIRST STARTED. CONTROL OF THE PUMP OUTPUT TO GUARANTEE THIS WILL INCLUDE SHUTTING DOWN OR STARTING UP NORTHSOUTH PUMPS AND/OR THROTTLING BACK OF INCREASING OF NORTHSOUTH PUMPS TO COORDINATE FLOWS AND ENSURE THE CANAL WATER LEVELS ARE MAINTAINED.
- g. FPL SHALL ENSURE THAT THE TOTALIZING HOUR FLOW METERS USED AT EACH PUMP STATION ARE AVAILABLE FOR PERIODIC DISTRICT INSPECTION AND VERIFICATION
- h. SPILL PREVENTION
  - A. ALL EQUIPMENT WILL BE BERMED IN ACCORDANCE WITH FPL STANDARD PROCEDURES FOR SPILL PREVENTION AND CONTROL.
  - B. ALL EQUIPMENT, HOSES, AND TANKS SHALL BE DESIGNED FOR USE ON OR NEAR WATER. CONDITION CHECKS OF ALL FLUID CONTAINING DEVICES SHALL BE MONITORED CONTINUOUSLY AS A PART OF THE 24 HOUR PUMP COVERAGE.
  - C. HYDRAULIC HOSES USED ON THE PUMPS NORTH OF 344TH AVE SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. THE HOSES SHALL UTILIZE THE SHORTEST PATH OUT OF THE WATER THAT IS AVAILABLE TO ASSURE GOOD VISIBILITY FOR MONITORING. THE HOSES SHALL BE SECURED IN PLACE TO PREVENT OVER TENSIONING AND ALLOW FOR CONTINUOUS INSPECTION.
  - D. THE HYDRAULIC PUMPS NORTH OF 344TH AVE WILL CONTAIN ONLY BIODEGRADABLE HYDRAULIC OIL DESIGNED FOR USE OVER WATER.
  - E. ALL FUEL TANKS USED FOR THE SOUTHERN PUMPS HAVE BUILT IN SECONDARY CONTAINMENT. ALL FUEL LINES WILL BE PROVIDED WITH SECONDARY CONTAINMENT.
  - F. THE PUMPS NORTH OF 344TH AVE WILL BE FUELED TWICE PER DAY OR AS NEEDED. NO ADDITIONAL FUEL STORAGE WILL BE IN THE SPERM RIGHT OF WAY.
  - G. THE PUMPS SOUTH OF 344TH AVE WILL BE FUELED THROUGH NURSE TANKS ON SHORE AS NEEDED. THE TRANSFER LINES BETWEEN THE PUMP AND THE NURSE TANKS WILL NOT BE CHARGED WHEN NOT IN USE.

- H. FLOATING BOOM WILL BE STAGED ON SITE FOR IMMEDIATE DEPLOYMENT IF NEEDED. ENOUGH BOOM TO CROSS THE CANAL A MINIMUM OF TWO TIMES WILL BE PROVIDED. PUMP OPERATORS WILL BE PROVIDED EMERGENCY NUMBERS TO IMMEDIATELY DISPATCH A CLEANUP AND BOOM CREW FROM THE TURKEY POINT FACILITY.
- I. A FIXED OIL BOOM WILL BE INSTALLED BOTH NORTH AND SOUTH OF THE FLOATING PUMPS IN THE SOUTHERN REACH.
- J. OIL ABSORBENT BOOMS AND PADS DESIGNED TO CLEAN UP PETROLEUM SPILLS ON WATER WILL BE LOCATED ON SITE. PUMP OPERATORS WILL BE TRAINED IN THE USE OF THESE MATERIALS.
- K. A DETECTED LEAK OF ANY PETROLEUM PRODUCTS (FUEL OR HYDRAULIC OIL) WILL RESULT IN THE IMMEDIATE SHUTDOWN OF THE PUMPS AT BOTH ENDS. THE PUMPS WILL NOT BE RESTARTED UNTIL ALL ISSUES HAVE BEEN RESOLVED AND THE EQUIPMENT CLEANED TO ALLOW FOR CONTINUOUS MONITORING.

## TECHNICAL SPECIFICATIONS

### DEFINITIONS

1. OWNER: FLORIDA POWER AND LIGHT (FPL)
2. ENGINEER: OWNER'S DESIGNATED REPRESENTATIVE FOR CONSTRUCTION INSPECTION AND OVERSIGHT
3. ENGINEER OF RECORD (EOR): ENGINEER WHOSE NAME AND SEAL IS AFFIXED TO THE DRAWINGS AND SPECIFICATIONS.
4. CONTRACTOR: FPL'S DESIGNATED CONTRACTOR OR VENDOR OR, WHERE APPLICABLE, FPL STAFF.
5. U.N.D.: UNLESS NOTED OTHERWISE

### GENERAL NOTES

1. THE CONTRACTOR SHALL INVESTIGATE THE PROJECT SITE PRIOR TO INITIATING ANY CONSTRUCTION
2. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL STRUCTURES AND EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS
3. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION TOGETHER WITH THE FPL PROJECT MANAGER TO ENSURE PUBLIC AND PRIVATE SAFETY IN AND AROUND THE CONSTRUCTION SITE.
4. DEMOLITION DEBRIS SHALL BE DISPOSED OF OFFSITE AT A LICENSED LANDFILL IN

## TAYLOR ENGINEERING INC.

10161 DEERWOOD PARK BLVD  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION #415

### FIGURE 3

PROJECT NOTES  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	REV.	
DRAWN BY	CAS		
CHECKED BY		DATE	03-11-15
APPROVED BY			DATE

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

## TECHNICAL SPECIFICATIONS (CONT)

5. ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.  
THE CONTRACTOR SHALL LOCATE ALL ABOVE-GROUND AND BELOW-GROUND UTILITIES BEFORE BEGINNING WORK.

6. ENGINEERING DESIGN AND PERMITTING FOR UNDERGROUND CROSSING OF SW 344TH STREET COMPLETED BY AMERICAN SERVICES OF MIAMI, CORP. CONTRACTOR SHALL REFERENCE THESE DRAWINGS AND PERMIT FOR ADDITIONAL ROAD CROSSING DETAILS.

### SUBMITTALS AND TESTING REQUIREMENTS

1. ALL TESTING, EITHER PRE-CONSTRUCTION OR CONSTRUCTION, AS REQUIRED HEREIN OR IN THE CONTRACT DOCUMENTS, SHALL BE PERFORMED BY AN INDEPENDENT QUALIFIED TESTING COMPANY. THE COSTS OF ALL SUCH TESTING SHALL BE BORNE BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BID PRICE.

2. THE QUALIFIED TESTING AGENCY SHALL BE APPROVED PER FOOT STANDARDS, AASHTO STANDARDS OR SIMILAR SUCH STANDARDS AS APPROVED BY THE ENGINEER. ALL TESTING WORK SHALL BE DONE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN FLORIDA AND SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN FLORIDA IF REQUESTED.

3. THE CONTRACTOR OR APPROPRIATE VENDOR SHALL SUBMIT REQUIRED SUBMITTALS. ALL SUBMITTALS REQUIRE APPROVAL BY THE ENGINEER U.N.C.

### SUBMITTAL PROCEDURES

1. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL REVIEW THE SUBMITTAL REQUIREMENTS AND PROVIDE A SUBMITTAL LOG

2. ENGINEER'S REVIEW OF SUBMITTALS DO NOT RELEASE CONTRACTOR FROM CONTRACTOR'S RESPONSIBILITY FOR PERFORMANCE OF REQUIREMENTS OF CONTRACT DOCUMENTS. NEITHER SHALL ENGINEER'S REVIEW RELEASE THE CONTRACTOR FROM FULFILLING PURPOSE OF INSTALLATION NOR FROM CONTRACTOR'S LIABILITY TO REPLACE DEFECTIVE WORK.

ENGINEER'S REVIEW OF SHOP DRAWINGS, SAMPLES, OR TEST PROCEDURES WILL BE ONLY FOR CONFORMANCE WITH DESIGN CONCEPTS AND FOR COMPLIANCE WITH INFORMATION GIVEN IN CONTRACT DOCUMENTS.

4. ENGINEER'S REVIEW DOES NOT EXTEND TO:

- ACCURACY OF DIMENSIONS, QUANTITIES, OR PERFORMANCE OF EQUIPMENT AND SYSTEMS DESIGNED BY CONTRACTOR.
- CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES EXCEPT WHEN SPECIFIED, INDICATED ON THE DRAWINGS, OR REQUIRED BY CONTRACT DOCUMENTS

**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 0000000000

FIGURE 4  
PROJECT NOTES  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
DRAWN BY: CAS  
CHECKED BY: 4 OF 23  
DATE: 03-11-15  
SCALE: 1"=10'-0"

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

- SAFETY PRECAUTIONS OR PROGRAMS RELATED TO SAFETY, WHICH SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- ENGINEER WILL BE ENTITLED TO RELY UPON THE ACCURACY OR COMPLETENESS OF DESIGNS, CALCULATIONS, OR CERTIFICATIONS MADE BY LICENSED PROFESSIONALS ACCOMPANYING A PARTICULAR SUBMITTAL WHETHER OR NOT A STAMP OR SEAL IS REQUIRED BY CONTRACT DOCUMENTS OR LAWS AND REGULATIONS.

### HOPE PIPE AND FITTINGS

- POLYETHYLENE PIPE AND FITTINGS SHALL BE PER 710 MATERIAL AND SHALL MEET THE SPECIFICATIONS DEFINED IN ASTM D3350 FOR A CELL CLASSIFICATION OF 445674C/E.
- PIPE SHALL BE IPS DR 20 OR DR 21 (PER ASTM F714) AS SPECIFIED ON THE DRAWINGS AND HAVING A MINIMUM WORKING PRESSURE RATING OF 80 PSI AND 100 PSI RESPECTIVELY. PIPE SHALL HAVE A SMOOTH INTERIOR WITH A MANNING'S N OF 0.011 OR LESS.
- FITTINGS SHALL BE OF THE SAME TYPE, GRADE, MATERIAL AND MINIMUM WALL THICKNESS AS THE PIPE
- FITTINGS SHALL BE IPS WITH A WORKING PRESSURE RATING EQUAL TO OR GREATER THAN THAT OF THE PIPE AND JOINTS.
- FITTINGS SHALL COMPLY WITH ASTM D3351, F1055, OR F2208 AS APPLICABLE.
- BACK UP RINGS SHALL BE DUCTILE IRON. BOLTS SHALL BE ASTM A307, GRADE A GALVANIZED IN ACCORDANCE WITH ASTM A153.
- FITTINGS, FLANGES, BACKUP RINGS AND OTHER APPURTENANCES SHALL BE SIZED FOR THE MAXIMUM ANTICIPATED WORKING PRESSURE AND ANY ANTICIPATED SURGE PRESSURES BUT NOT LESS THAN CLASS B (88 PSI)
- INSTALL PIPE AND FITTINGS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ABOVE-GROUND INSTALLATIONS.
- ALL PIPES SHALL BE JOINED USING HEAT FUSION IN ACCORDANCE WITH ASTM F2820. JOINTS SHALL BE BUTT FUSION WELDED, RESULTING IN A JOINT THAT IS INTEGRAL WITH THE PIPE AND AS STRONG AS THE PIPE ITSELF. WHERE BUTT FUSION WELDING IS NOT POSSIBLE PIPE SHALL BE JOINED USING EXTRUSION WELDING.
- LAY PIPELINES TO THE GRADES (VERTICAL) AND ALIGNMENT (HORIZONTAL) INDICATED ON THE PROJECT DRAWINGS

### HOPE PIPE AND FITTINGS SUBMITTALS

- HOPE PIPE AND FITTING MATERIAL INFORMATION: SUBMIT DOCUMENTATION DEMONSTRATING THAT THE HOPE PIPE AND ASSOCIATED FITTINGS MEET THE SPECIFICATIONS.

## TECHNICAL SPECIFICATIONS (CONT)

### PUMPS AND VALVES

1. PUMPS SHALL BE SUPPLIED BY THE CONTRACTOR. THE PUMP AND PIPING SYSTEM SHALL BE CAPABLE OF CONVEYING UP TO 100 MILLION GALLONS OF WATER IN A 24 HOUR PERIOD AND CAPABLE OF OPERATING CONTINUOUSLY. PUMPS SHALL BE THE TYPE SHOWN ON THE DRAWINGS AND PLACED AT THE LOCATION SHOWN ON THE DRAWINGS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. PUMPS SHALL BE MAINTAINED AND OPERATED BY FPL/FL CONTRACTORS
3. UNLESS OTHERWISE APPROVED BY THE ENGINEER, PUMPS SHALL BE SUPPLIED WITH CONTROLS (A VFD, SPEED ADJUSTABLE DIESEL ENGINE, FLOW/PRESSURE ADJUSTABLE DRIVE OR SIMILAR DEVICE) TO CONTROL PUMP FLOW AND ALLOW FOR GRADUAL STARTUP AND SHUTDOWN.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PUMPS AGAINST DAMAGE DURING OPERATIONS. THE CONTRACTOR SHALL PROVIDE GAUGES, PRESSURE RELIEF VALVES, CHECK VALVES, AIR RELEASE VALVES, AND OTHER EQUIPMENT NECESSARY TO PROTECT THE PUMPS AND PIPING SYSTEM AGAINST DAMAGE DUE TO SURGE, CAVITATION, BACKPRESSURE, OVERPRESSURE, VACUUM PRESSURE, DEBRIS, AND OTHER CONDITIONS THAT COULD CAUSE DAMAGE TO THE PUMPS OR THE PIPING SYSTEM.
5. VALVES SHALL BE CAPABLE OF WITHSTANDING THE MAXIMUM ANTICIPATED WORKING PRESSURES AND SURGE PRESSURES. VALVES SHALL COMPLY WITH APPLICABLE ISO, ANSI, OR ASME STANDARDS.
6. THE CONTRACTOR SHALL PROVIDE TURBIDITY CURTAINS AND SCREENS AS NECESSARY TO CONTROL DEBRIS AND VEGETATION AND PREVENT FOREIGN MATERIAL FROM ENTERING THE PUMP INTAKES.

### PUMP SUBMITTALS

1. SUBMIT PUMP DATA, INCLUDING PUMP CURVES, INSTALLATION MANUALS, OPERATIONS MANUALS, MINIMUM AND MAXIMUM OPERATING CRITERIA, ETC. TO THE ENGINEER FOR APPROVAL.
2. SUBMIT VALVE DATA AND LOCATION PLAN TO THE ENGINEER FOR APPROVAL.
3. SUBMIT PIPE ANALYSIS, UPDATED WITH ALL VALVE LOCATIONS AND DETERMINE REQUIRED PUMP HEAD AND MAXIMUM DESIGN PRESSURE FOR PIPES.
4. PUMP STARTUP AND SHUTDOWN PLAN: SUBMIT A WRITTEN PLAN DESCRIBING THE PRECAUTIONS THE CONTRACTOR WILL TAKE DURING STARTUP, PIPE FILLING, CONTROLLED SHUTDOWN, AND (IF PRACTICAL) EMERGENCY SHUTDOWN TO PREVENT SURGE, VACUUM PRESSURE, AND TRAPPED AIR IN LINE.

### OPERATIONS

1. FPL OR FPL CONTRACTORS SHALL PROVIDE INSPECTORS AND TRAINED OPERATORS 24 HOURS PER DAY TO MONITOR THE PUMPS, PIPING SYSTEM, AND CONVEYANCE THROUGH THE CANAL. INSPECTORS AND OPERATORS SHALL MONITOR THE PIPELINES, PUMPS, CANAL, AND ROADWAY CROSSING FOR EVENTS THAT COULD AFFECT PUMPING OPERATIONS OR CAUSE DAMAGE TO THE ENVIRONMENT OR PROPERTY. EVENTS THAT REQUIRE REMEDIAL ACTION INCLUDE, BUT ARE NOT LIMITED TO, UNANTICIPATED PUMP SHUT-DOWNS, FUEL LEAKS, PIPE LEAKING, PIPE BURST, SHORE EROSION, EXCESSIVE PIPE MOVEMENT, INTAKE GRATE FOULING, ETC.
2. CONTRACTOR SHALL WALK DOWN THE PUMPING STATIONS, PIPING AND THE L31E (S) CANAL DAILY DURING PUMPING ACTIVITY TO ENSURE NO UNUSUAL OR DELETERIOUS CONDITIONS ARE DEVELOPING.
3. INSPECTORS AND OPERATORS SHALL BE EQUIPPED WITH RADIO/WIRELESS COMMUNICATION. THE CONTRACTOR SHALL STATION AT LEAST ONE RADIO/WIRELESS EQUIPPED OPERATOR AT EACH SET OF PUMPS 24 HOURS PER DAY WHEN PUMPS ARE OPERATING TO EXECUTE AN EMERGENCY PUMP SHUT DOWN IF REQUIRED.
4. PUMPS SHALL BE STARTED, SHUT DOWN, AND OPERATED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND FPL APPROVED OPERATION PLANS AND DAILY INSTRUCTION.
5. THE CONTRACTOR SHALL INSTALL AND MONITOR STAFF GAUGES AT ALL THREE CANAL LOCATIONS AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL CONDUCT PERIODIC MAINTENANCE CHECKS AND SERVICE TO ALL EQUIPMENT AS NECESSARY TO MAINTAIN OPERATIONS.

**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 4415

### FIGURE 5

#### PROJECT NOTES

FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	REV.
DESIGNER	CAS	
CHECK	5 of 23	
DATE	03-11-15	

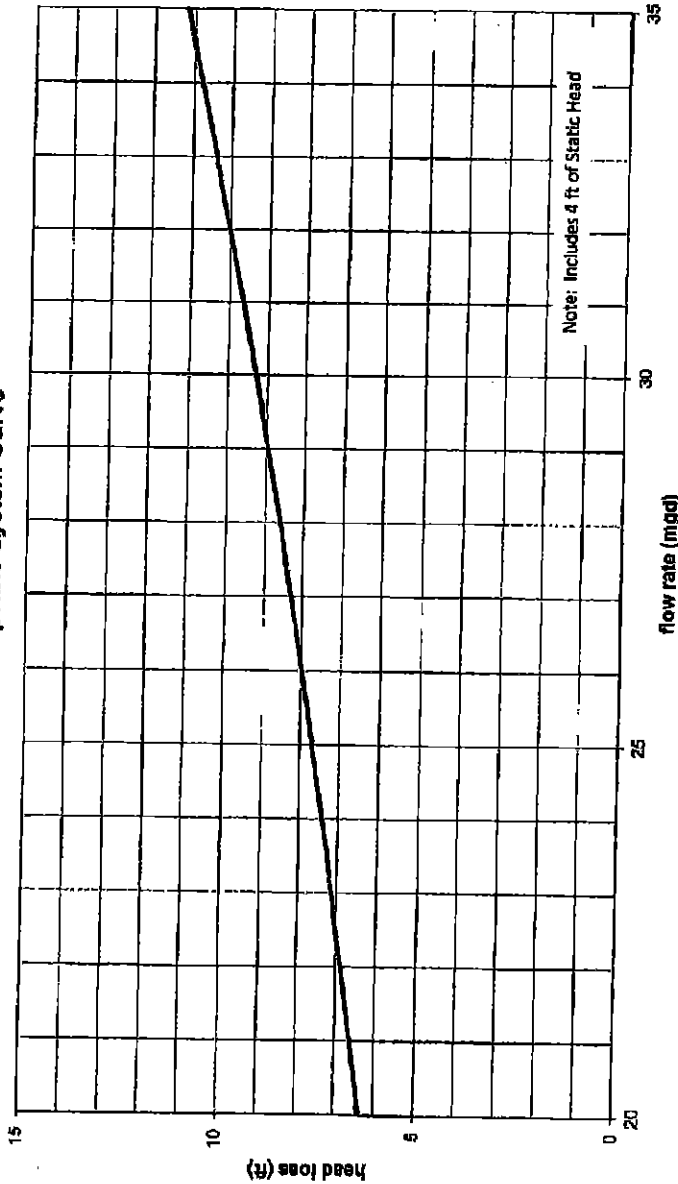
PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

APPROVED FOR AGENCY REVIEW

DATE

**NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.**

**Intake System  
Individual Pipeline System Curve**



**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32208  
CERTIFICATE OF AUTHORIZATION 1487

**FIGURE 8**

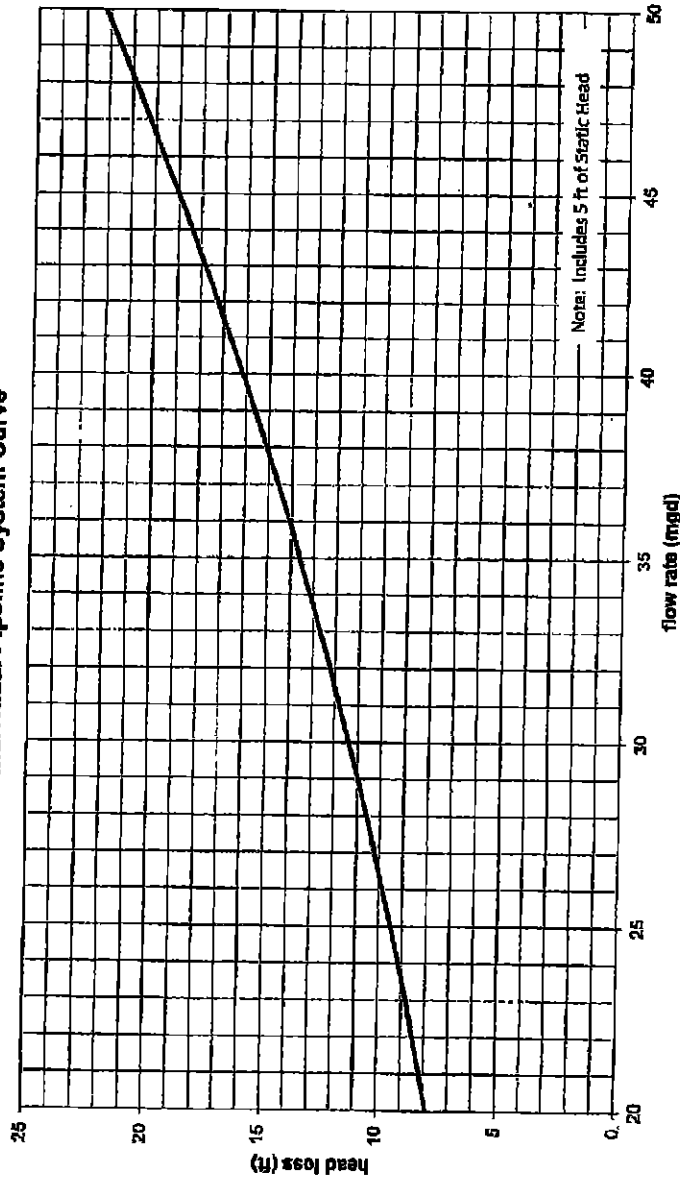
**INTAKE SYSTEM CURVE  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA**

PROJECT	P2015-034
CLIENT	CAS
DATE	8/8/23
SCALE	03-11-15

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

# Discharge System Individual Pipeline System Curve



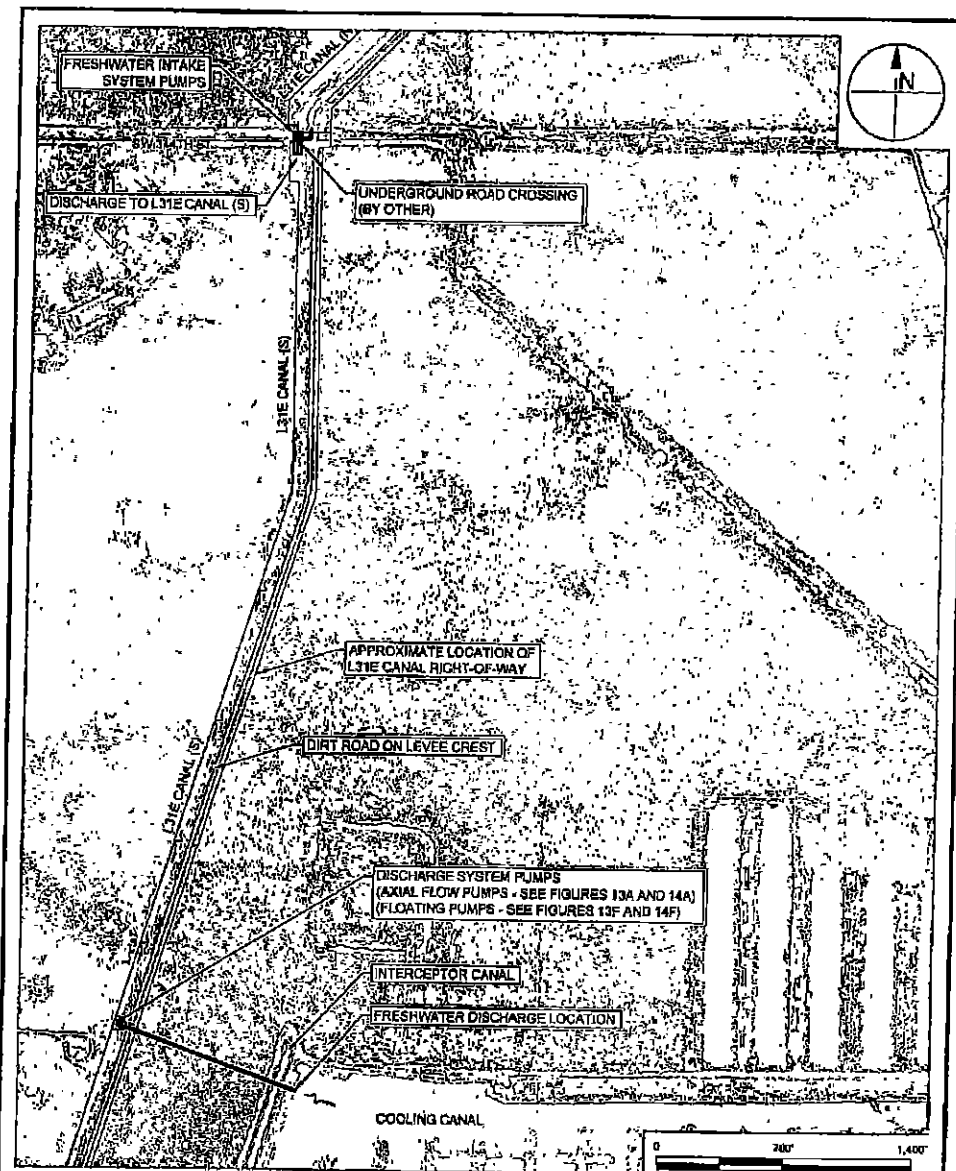
**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CENTRO OF AUTHORITY 1-800-875-875

FIGURE 7  
DISCHARGE SYSTEM CURVE  
FPL TURNKEY PORT COOLING CANAL FRESHWATER DISCHARGE  
MANIPULOUS COUNTY, FLORIDA

PROJECT	P2015-004	DATE
DESIGNED BY	CAS	
CHECKED BY	7 of 23	
DATE	03-11-15	REVISIONS: 000-000-000-000

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW



**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD  
BLDG 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF REGISTRATION # 4

**FIGURE 8**  
**PROJECT OVERVIEW**  
**FPL TURKEY POINT COOLING CANAL FRESHWATER**  
**DISCHARGE**  
**MIAMI-DADE COUNTY, FLORIDA**

PROJECT: F2015-014 DRAWN BY: CAS PAGE: 8 of 23 DATE: 03.11.15

SCALE: 1" = 700'

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

APPROX. EXISTING GRADE

INSTALL STAFF GAUGE FOR VISUAL MONITORING OF CANAL WATER LEVELS. COORDINATE GAUGE LOCATION WITH SEYMOUR HOMESTEAD FIELD OFFICE.

POWERPAK (TYP)

TEMPORARY POWER DISTRIBUTION AND CONTROL PANELS

FRESHWATER INTAKE SYSTEM  
AXIAL FLOW PUMP (TYP)

SHARE AND LEVEL POWERPAKS FOR FLAT PLACEMENT TO ENSURE STABLE AND SECURE POSITIONING (TYP)

WETLAND LINE (TYP)

PURGE TANK, SIZE AND NUMBER DEPENDENT UPON VENDOR

EXISTING GUARDRAIL

HYDRAULIC HOSES TO PUMP  
MAX. LENGTH 150 FT (TYP)

EXISTING 12" WATER MAIN  
(LOCATION TBD)

3 EACH - 30" HDPE (PS 4710 IPS, DR 21, 100' PSI) DISCHARGE PIPES

EXISTING COMMUNICATION LINE  
(LOCATION TBD)

UNDERGROUND ROAD CROSSING (BY OTHERS)

45° ELBOW  
(ANGLE 45° LEFT)

45° ELBOW  
(ANGLE UP)

45° ELBOW  
(ANGLE 45° RIGHT)

INSTALL STAFF GAUGE FOR VISUAL MONITORING OF CANAL WATER LEVELS. COORDINATE GAUGE LOCATION WITH SEYMOUR HOMESTEAD FIELD OFFICE.

0 40' 80'

SCALE: 1" = 40'

0 40 80

Scale in feet

0 40 80

Scale in feet

**TAYLOR ENGINEERING INC.**  
10181 OBERWOOD PARK BLVD.  
BLVD 300, SUITE 300  
JACKSONVILLE, FL 32226  
CERTIFICATE OF AUTHORIZATION #40

FIGURE 8  
INTAKE SYSTEM SITE PLAN  
FPL TURKEY POINT COOLING CANAL FRESHWATER  
DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

P2015-004 CAS 9 of 25 03-11-16

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SPWM HOMESTEAD FIELD OFFICE

HYDRAULIC HOSE TO PUMP  
MAX. LENGTH 100 FT (TYP)

AXIAL FLOW PUMPS ON  
48" BASE (TYP)

16 LF OF 30" HDPE PIPE W/PIPE FLANGE  
AND ADAPTER (PE 4710 IPS, DR21)

30" PIPE FLANGE AND ADAPTER (TYP)  
45° ELBOW (TYP)

BRACE ACROSS PIPES IF  
NECESSARY TO ENSURE STABILITY  
AND ELIMINATE MOVEMENT

EXISTING COMMUNICATION LINE  
(LOCATION TBD)

45° ELBOW  
(ANGLE 45° RIGHT)

45° ELBOW  
(ANGLE UP)

45° ELBOW  
(ANGLE 45° LEFT)

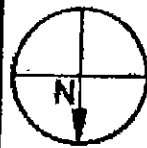
UNDERGROUND ROAD  
CROSSING (BY OTHERS)

SW 344TH STREET  
EDGE OF PAVEMENT

BOLTED CONNECTION (TYP)  
80 LF OF 30" HDPE PIPE W/PIPE FLANGE  
AND ADAPTER (PE 4710 IPS, DR21)

EXISTING GUARDRAIL

EXISTING 12" WATER MAIN  
(LOCATION TBD)

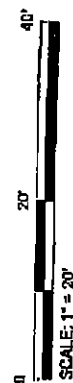
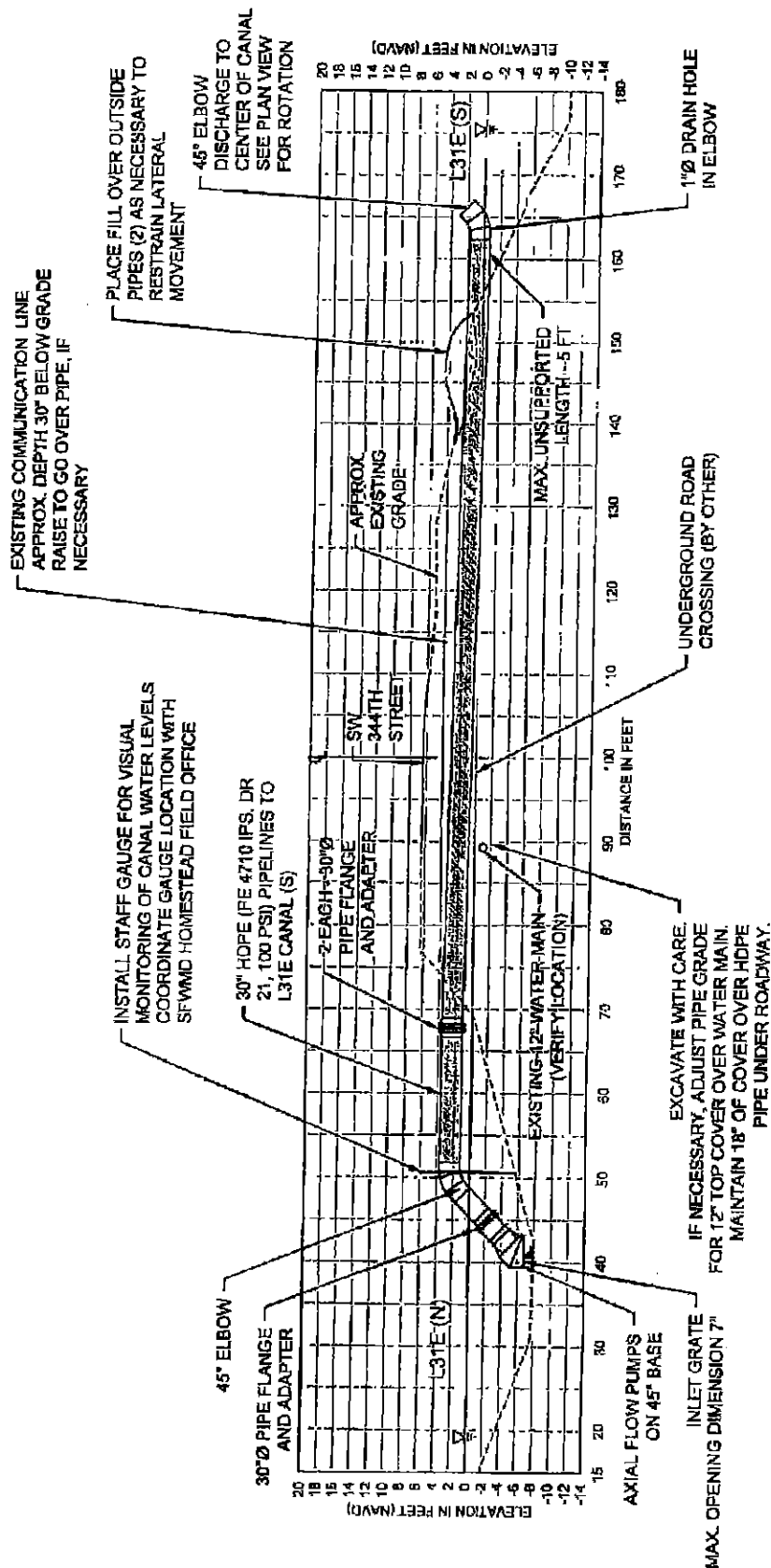


**TAYLOR ENGINEERING INC.**  
10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 015

**FIGURE 10**  
INTAKE SYSTEM PUMP AND UNDER ROAD CROSSING PLAN  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2015-034	SHEET	10 OF 23	DATE	03-11-15
CATEGORY	CAS	REVISION		ISSUED FOR REVIEW	

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



<b>TAYLOR ENGINEERING INC.</b> 10151 DEERWOOD PARK BLVD. BLDG. 300, SUITE 300 JACKSONVILLE, FL 32256 CERTIFICATE OF AUTHORIZATION # 41615		<b>FIGURE 11</b> INTAKE SYSTEM PUMP AND UNDER ROAD CROSSING PROFILE FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE MIAMI-DADE COUNTY, FLORIDA	
		PROJECT: P2015-034 DRAWN BY: CAS SHEET: 11 of 23 DATE: 03-11-15	SEAL PROJECT: P2015-034 DRAWN BY: CAS SHEET: 11 of 23 DATE: 03-11-15

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

DISCHARGE SYSTEM PUMPS  
(AXIAL FLOW PUMPS - SEE FIGURES 13A AND 14A)  
(FLOATING PUMPS - SEE FIGURES 13F AND 14F)

NO EQUIPMENT OR MATERIAL STORAGE ON L31E LEVEE

L31E CANAL (B)

ROUTE PIPE THROUGH  
WETLAND AT GRADE

WETLAND LINE (TYP)

HOPE PIPELINES ON  
FLOATS ACROSS CANAL

COOLING  
CANAL

EXISTING ROADWAY

BURIED ROAD CROSSING

FRESHWATER DISCHARGE LOCATIONS

TIMBER MAT (8 X 10) (TYP)

2 - 38" HOPE (FE 4710 TRB,  
OR 26) PIPELINE TO  
COOLING CANAL

INTERCEPTOR  
CANAL



0 125' 250'  
SCALE: 1" = 125'

**TAYLOR ENGINEERING INC.**

10161 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32258  
CERTIFICATE OF AUTHORIZATION # 4015

FIGURE 12  
DISCHARGE SYSTEM SITE PLAN  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
DRAWN BY: CAS  
CHECKED BY: 12 of 23  
DATE: 03-11-16

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



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10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 015

FIGURE 13A

DISCHARGE SYSTEM AND LEVEE CROSSING PLAN  
AXIAL FLOW PUMPS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-034

CLIENT FAS

SHEET 13 OF 23

DATE 03-11-15

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

DESIGNED BY: J. L. B. DRAWN BY: J. L. B.

DATE

2 - 4" ELECTRICAL CONDUITS  
FOR POWER AND CONTROL  
SYSTEMS

TEMPORARY POWER DISTRIBUTION  
AND CONTROL PANELS

22.5" ELBOW (TYP)

2 - 36" HDPE (PE 4710  
IPS, DR 28) PIPELINE TO  
COOLING CANAL

ROUTE PIPE THROUGH WETLAND AT GRADE

36" PIPE FLANGES (TYP)

APPROX. EDGE OF ROAD

NURSE TANK (TYP)

22.5" ELBOW (TYP)

22.5" ELBOW (TYP)

HYDRAULIC DRIVE UNIT (TYP)

TIMBER MAT (8 X 10) (TYP)

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SFWMD HOMESTEAD FIELD OFFICE

FLEXIBLE COUPLERS (TYP)

AXIAL FLOW  
PUMPS (TYP)

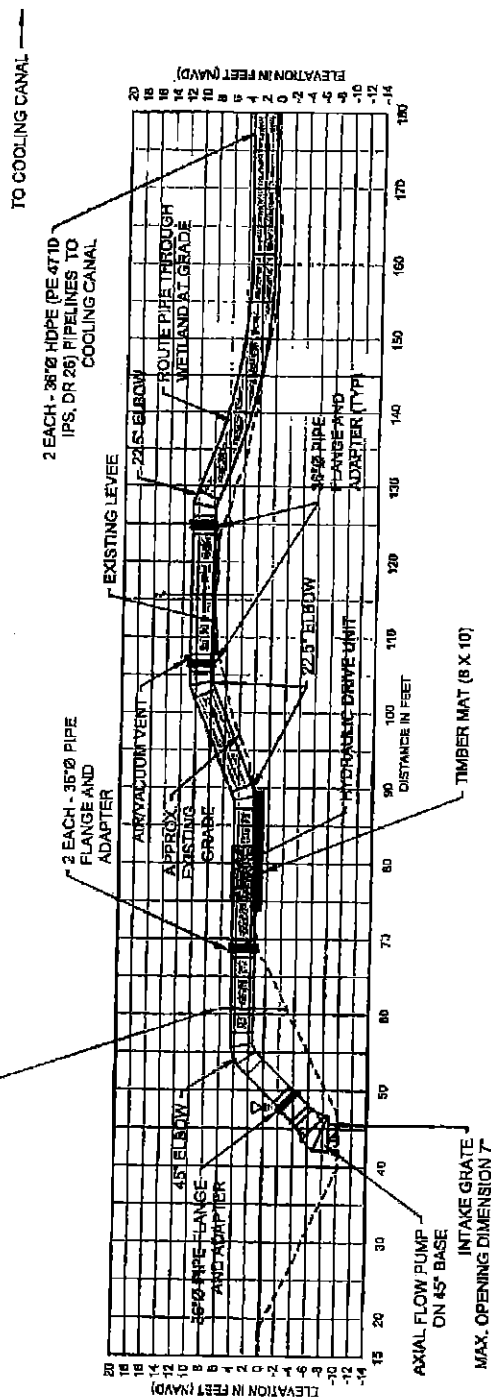
HYDRAULIC HOSES TO PUMP  
MAX. LENGTH 160 FT (TYP)

OIL BOOM (TYP)



NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SPWMD HOMESTEAD FIELD OFFICE



**TAYLOR ENGINEERING INC.**  
10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 0015

FIGURE 14A  
DISCHARGE SYSTEM AND LEVEE CROSSING PROFILE  
AXIAL FLOW PUMPS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

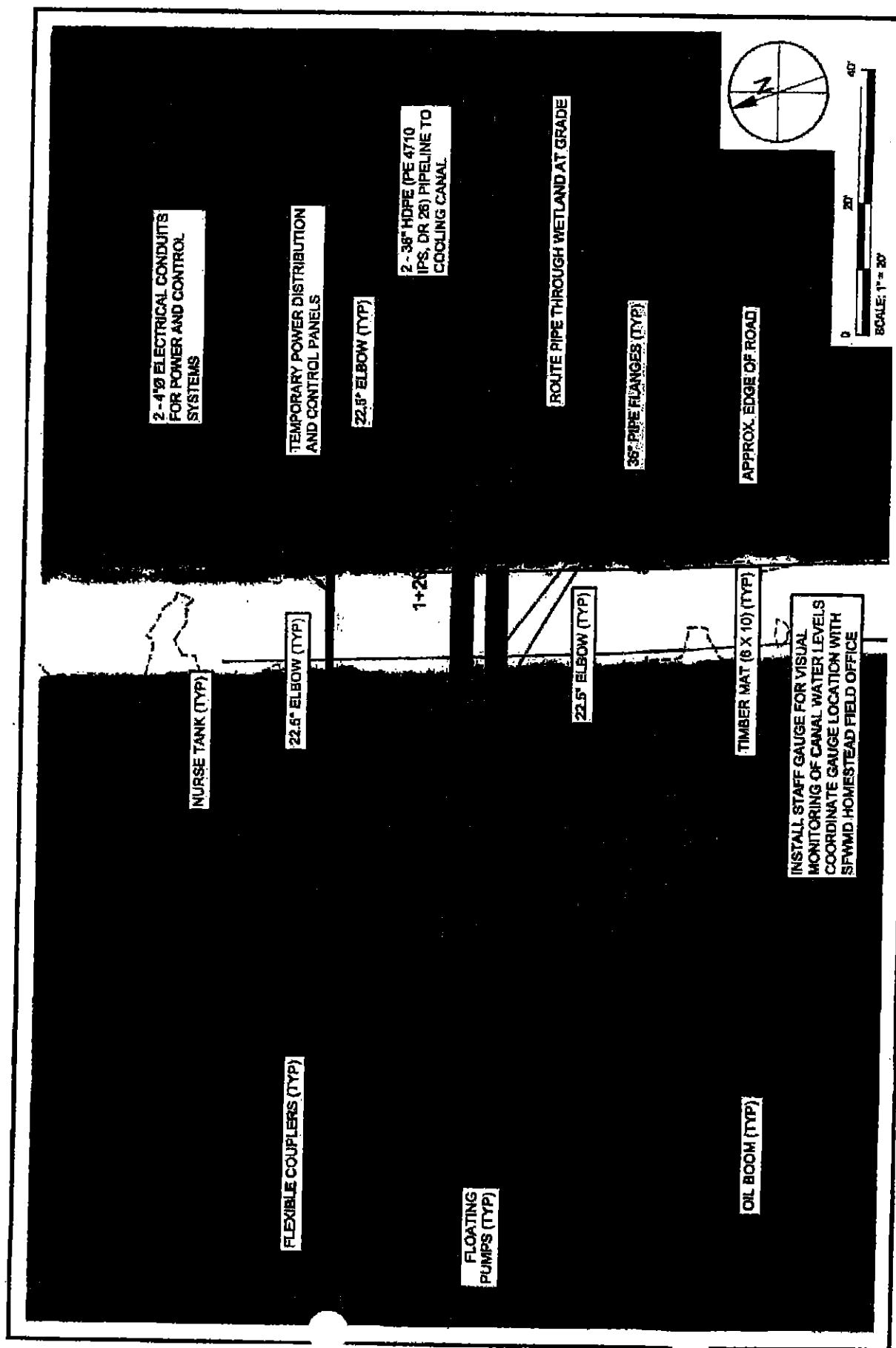
PROJECT P2015-034  
SHEET 07  
CNS  
14 of 23  
DATE 03-11-15


PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

APPROVED FOR TRANSMISSION

DATE

CITY OF MIAMI, FLORIDA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF STREETS AND SANITATION  
 3111 10TH AVENUE, N.W.  
 MIAMI, FLORIDA 33136

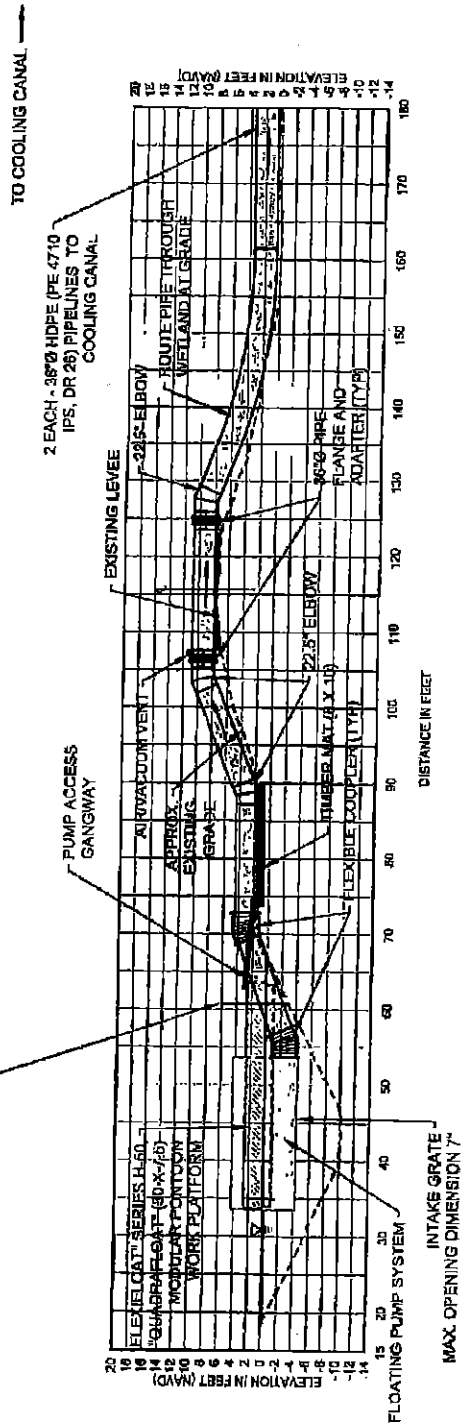


 <b>TAYLOR ENGINEERING INC.</b> 10151 DEERWOOD PARK BLVD. BLDG. 300, SUITE 300 JACKSONVILLE, FL 32256 CERTIFICATE OF AUTHORIZATION # 4115		<b>FIGURE 13F</b> DISCHARGE SYSTEM AND LEVEE CROSSING PLAN FLOATING PUMPS FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE MIAMI-DADE COUNTY, FLORIDA		PROJECT: P2015-034 DRAWN BY: CAS SHEET: 18 OF 23 DATE: 03-11-15	DESIGNED BY: MICHAEL J. HARRIS, P.E. DATE:
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PRELIMINARY DRAWINGS- THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

NOTE: PUMP MOTORS TO BE ELECTRICALLY OR DIESEL DRIVEN.

INSTALL STAFF GAUGE FOR VISUAL  
MONITORING OF CANAL WATER LEVELS  
COORDINATE GAUGE LOCATION WITH  
SFWMD HOMESTEAD FIELD OFFICE



**TAYLOR ENGINEERING INC.**

10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION #00000000

FIGURE 14F  
DISCHARGE SYSTEM AND LEVEE CROSSING PROFILE  
FLOATING PUMPS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT P2015-0334

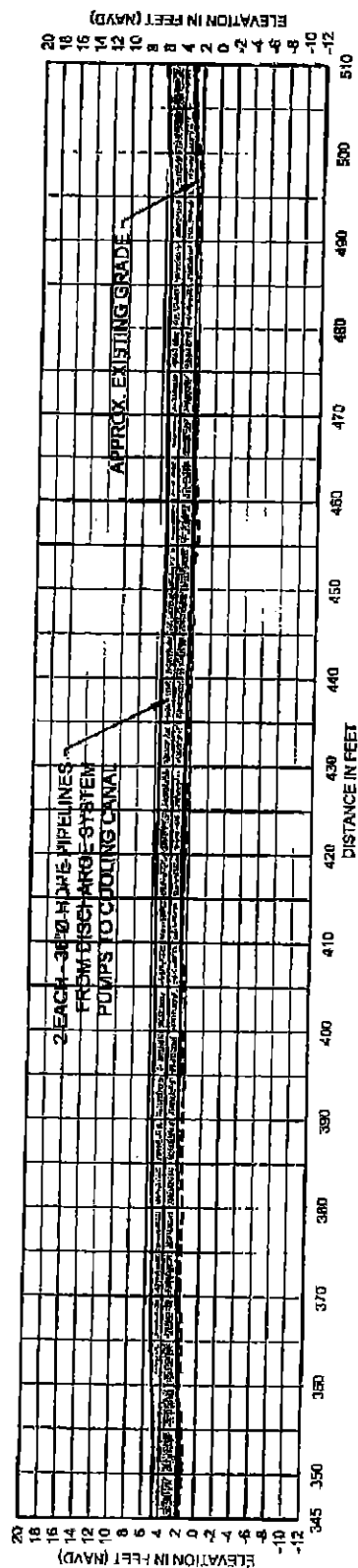
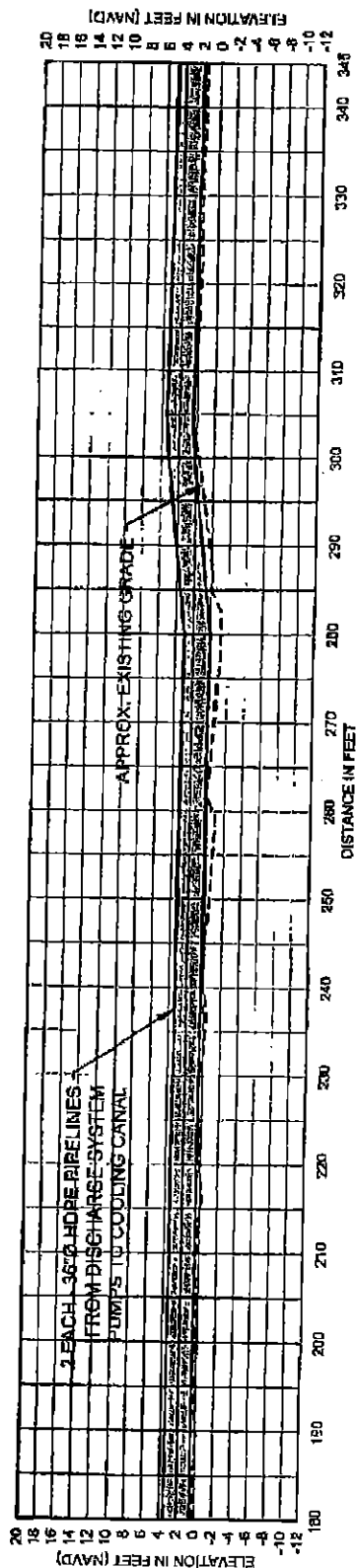
DATE 18 OF 23

DATE 03-11-15

PRELIMINARY DRAWINGS THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

DESIGNED BY MICHAEL J. WOODWARD

DATE



0 20 40'  
SCALE: 1" = 20'



**TAYLOR ENGINEERING INC.**  
10161 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION #4515

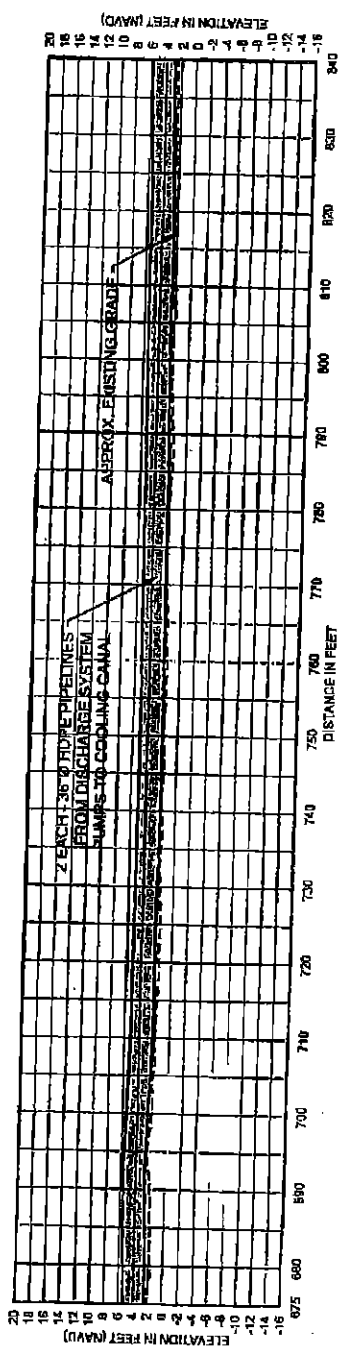
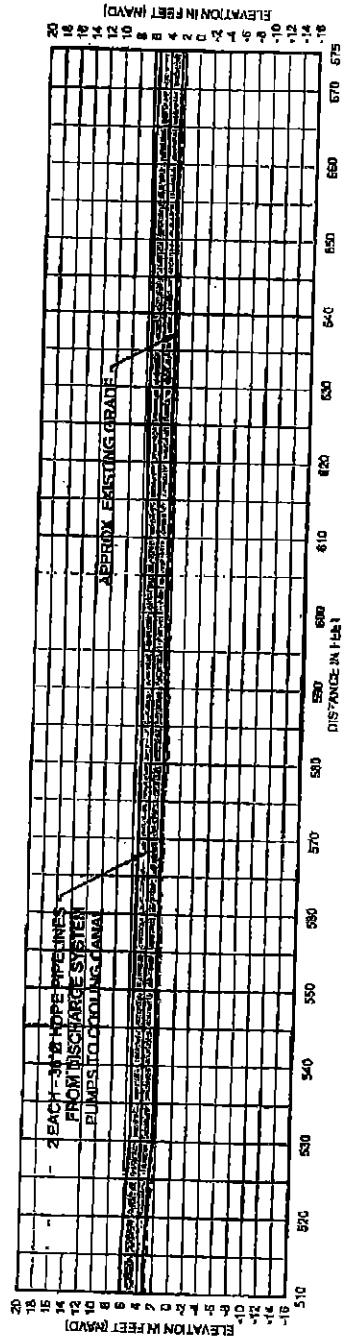
**FIGURE 15**  
**DISCHARGE SYSTEM PROFILES**  
STA. 1+80 THRU 5+10  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

P2015-034  
CASH  
17 of 23  
03-11-15

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

MICHAEL P. TAYLOR, P.E.

DATE



**TAYLOR ENGINEERING INC.**  
 10151 DEERWOOD PARK BLVD  
 BLDG. 300, SUITE 300  
 JACKSONVILLE, FL 32256  
 CERTIFICATE OF AUTHORIZATION 14815

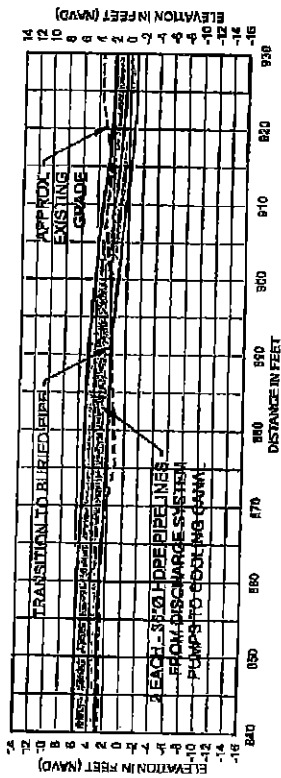
**FIGURE 16**  
**DISCHARGE SYSTEM PROFILES**  
 STA. 8+10 THRU 8+40  
 FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
 MIAMI-DADE COUNTY, FLORIDA

PROJECT: P2015-034  
 DRAWN BY: CAS  
 DATE: 18 09/23  
 PAGE: 02-11-15


PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

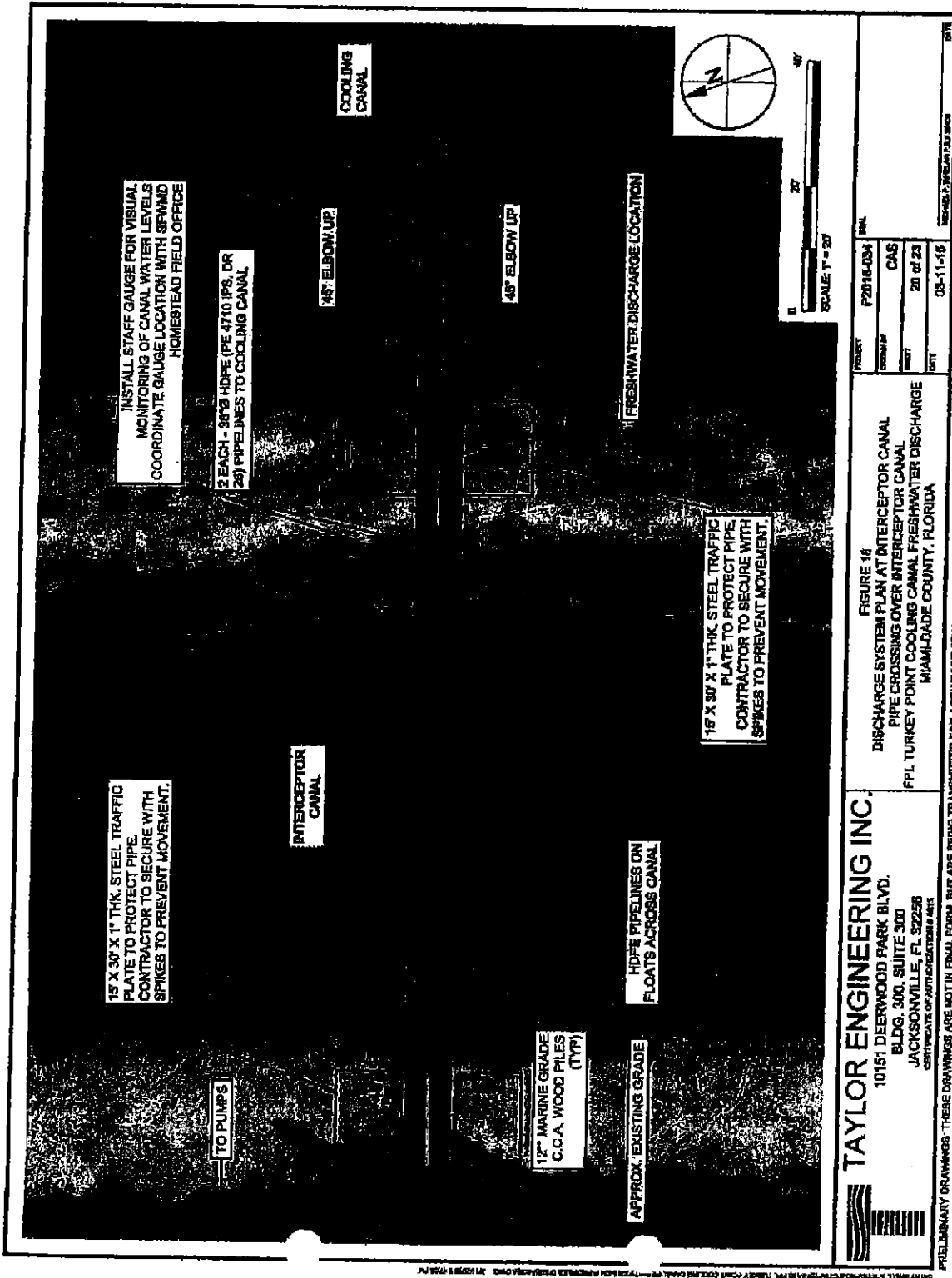
DATE: 03-11-15  
 MICHAEL P. MURPHY, P.E., M.A.S.E.

DATE: 03-11-15  
 PROJECT: FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
 DRAWING: STA. 8+10 THRU 8+40  
 SHEET: 02-11-15



SCALE 1" = 20'

 <b>TAYLOR ENGINEERING INC.</b> 10151 DEERWOOD PARK BLVD. BLDG. 300, SUITE 300 JACKSONVILLE, FL 32256 CERTIFICATE OF AUTHORIZATION # 0815		<b>FIGURE 17</b> DISCHARGE SYSTEM PROFILES STA. 840 THRU 8+30 FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE MIAMI-DADE COUNTY, FLORIDA		PROJECT P2015-034	DRAWING CAS
		SHEET 19 OF 23	DATE 03-11-15		
PRELIMINARY DRAWINGS- THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.					

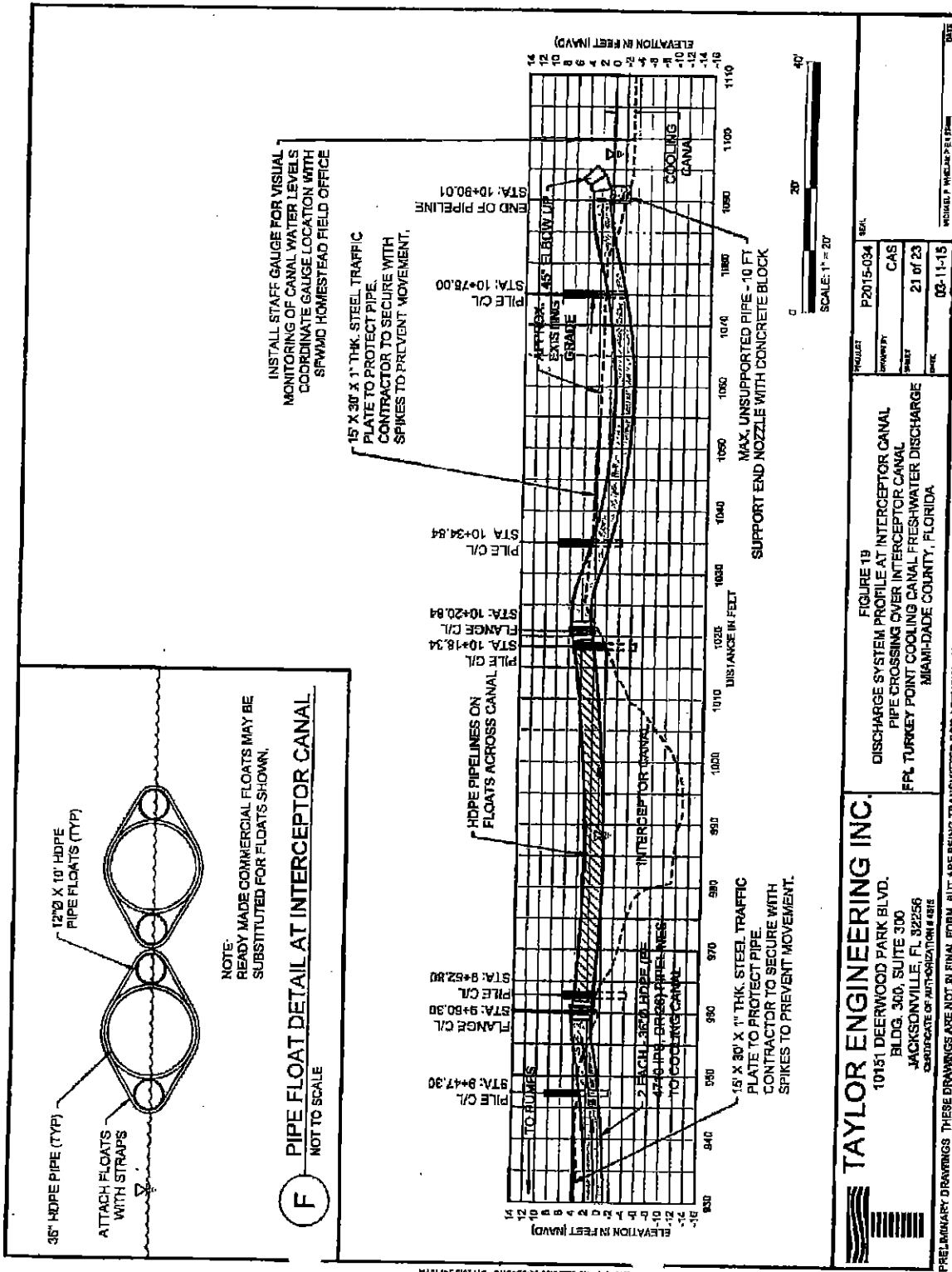


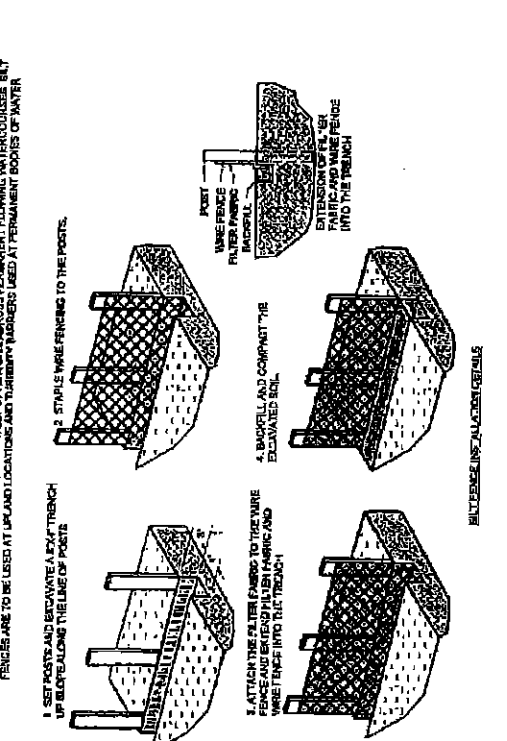
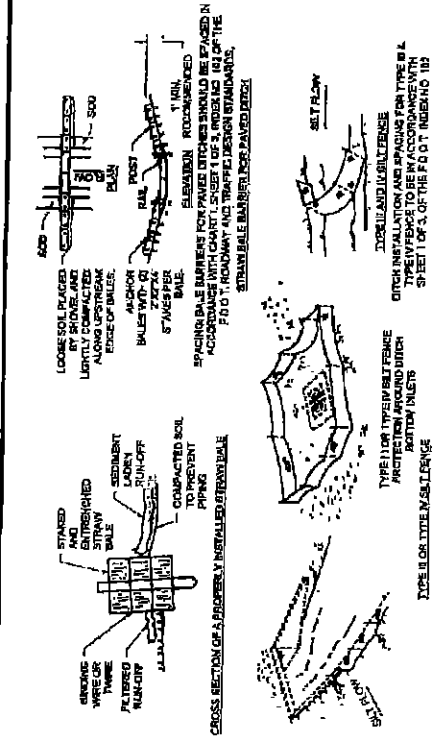
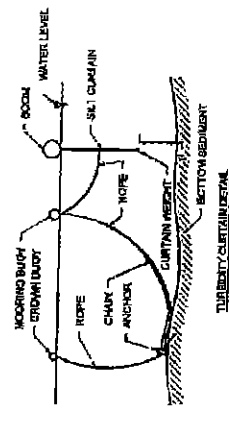
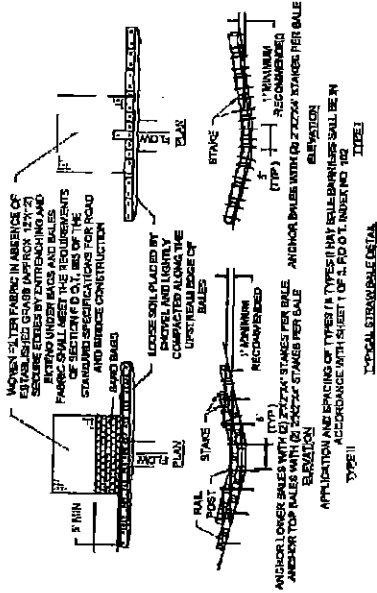
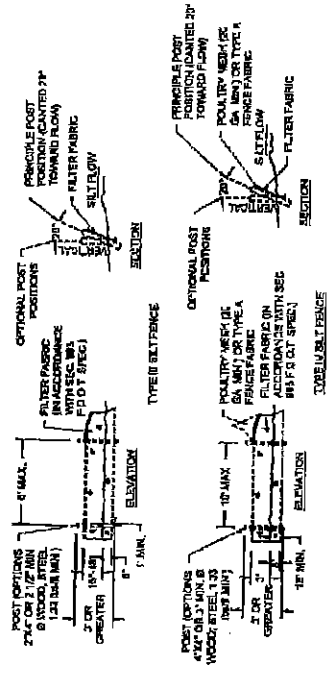
**TAYLOR ENGINEERING INC.**  
10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32258  
CERTIFICATE OF AUTHORIZATION #445

**FIGURE 18**  
DISCHARGE SYSTEM PLAN AT INTERCEPTOR CANAL  
PIPE CROSSING OVER INTERCEPTOR CANAL  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA

PROJECT	P2016-034	SHEET	20 of 23	DATE	03-11-16
DESIGN BY	CAS	CHECKED BY		APPROVED BY	
SCALE: 1" = 20'					

PRELIMINARY DRAWINGS - THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.





**TAYLOR ENGINEERING INC.**  
10151 DEERWOOD PARK BLVD.  
BLDG. 300, SUITE 300  
JACKSONVILLE, FL 32256  
CERTIFICATE OF AUTHORIZATION # 4416

**FIGURE 20**  
EROSION CONTROL DETAILS  
FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE  
MIAMI-DADE COUNTY, FLORIDA


PROJECT	P2015-004	DATE	JAN
DRAWN BY	CAS		
SHEET	22 of 23		
DATE	03-11-15		

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

THE CONTRACTOR SHALL IMPROVE AND MAINTAIN EROSION CONTROL MEASURES AS NECESSARY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AND COMPLY WITH STATE WATER QUALITY CRITERIA FOR SEDIMENT TRANSPORT. EROSION CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO VEGETATION STRIPES, MULCHING, AND TYPING. WHEN A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE WHO IS RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING EROSION CONTROL, COMPLETION COSTS, AND FINES.

- DIFFERED AREAS SHALL BE MAINTAINED IN ACCORDANCE WITH CITY, COUNTY, STATE AND FEDERAL REGULATORY AGENCIES (A PERMITS) AND ALL APPLICABLE LOCAL ORDINANCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING PERMANENT VEGETATION AT ALL DISTURBED AREAS PER DRAINAGE AND MEETING THE VEGEATATION COVER AS ESTABLISHED
- VEGETATION CONTROL RESOURCES SHALL BE MAINTAINED FOR THE ENTIRE DURATION OF THE PROJECT OR UNTIL VEGETATION IS ESTABLISHED
- EROSION CONTROL MEASURES SHALL BE PLACED ON CONTIGUOUS PORTS OF DISBURGMENT TO MINIMIZE WEATHER EROSION AND INCLUDING BURIED RUNOFF CURBS, SLOTTED BOTTOM INLETS, T-SHOES, AND DOWNSTREAM PORTS OF DISBURGMENT CANALS, AND FINAL WATER ADJUSTMENT TO CONSTRUCTION
- 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A NOTICE OF INTENT TO THE PERMITS AGENCY WITH AN APPLICATION FOR EROSION CONTROL PLAN AND NOTIFICATIONS
- THE CONTRACTOR SHALL WAIVE ANY CLAIMS IN ORDER TO PREVENT CUMULATIVE LOSS OF THE EROSION CONTROL SYSTEM. CONTRACTOR SHALL MAINTAIN THE PLAN THROUGHOUT THE PROJECT COMPLETION
- THE INTERCOMMITTEE IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ALL WORK MUST BE MAINTAINED
- BUT FENCES AND SAFETY BARRIERS SHALL BE REPOSITED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY

[illegible]

 <b>TAYLOR ENGINEERING INC.</b> 10151 DEERWOOD PARK BLVD. BLDG. 300, SUITE 300 JACKSONVILLE, FL 32286 CERTIFICATE OF AUTHORIZATION #4818	FIGURE 21 EROSION CONTROL NOTES FPL TURKEY POINT COOLING CANAL FRESHWATER DISCHARGE MIAMI-DADE COUNTY, FLORIDA		PROJECT "COWWAP"	P2015-034	SHEL
	DATE 03-11-15	SHEET 23 OF 23	CDS	DESIGNED BY 03-11-15	CHECKED BY 03-11-15

**Attachment F**  
**RER-DERM Project Report**

**PROJECT REPORT**  
**MODIFICATION REQUEST FOR CLASS I PERMIT NO. CLI-2014-0312**

Request to Modify Class I Permit for Additional Short-Term Temporary Impacts to 0.24 Acres of Halophytic Wetlands at the Properties Identified by Folio Numbers 30-7029-001-0011, 30-7290-000-0010, and 30-7029-001-0012, Miami-Dade County, Florida

**DATE: May 5, 2015**

Staff's recommendation of approval for the above-referenced permit application is based on the applicable evaluation factors under Section 24-48.3 of the Code of Miami-Dade County, Florida. The following is a summary of the proposed project with respect to each applicable evaluation factor:

1. **Potential Adverse Environmental Impact** – The withdrawal of water from the L-31E Canal is a temporary event that may only occur June 1 through November 30, 2015 and 2016. As a condition of the Final Order from the SFWMD, pumping is only authorized to occur each day after discharges to Biscayne Bay equal or exceed the amount reserved pursuant to State rule for the protection of fish and wildlife in Nearshore Central Biscayne Bay, as determined daily by the SFWMD. The SFWMD final order specifies that pumping operations will be managed by FPL through the monitoring of real time data available on the SFWMD website. The authorized operational plan requires that FPL synchronize the volumes and rates of pumping to avoid any potential drawdown of the L-31E Canal. The pump stations are required to be manned 24 hours a day, and the SFWMD may require FPL to stop pumping at any time. The SFWMD Final Order requires FPL to generate a daily report any time water is withdrawn from the L-31E Canal, and submit weekly reports that summarize daily pumping data. To further address potential hydrologic and water quality impacts, the conditions of the Class I permit will require FPL to implement a comprehensive monitoring program.

The direct physical impacts associated with the construction of the proposed project will result in temporary impacts to approximately 0.24 acres of halophytic wetlands; however, these impacts have been minimized to the maximum extent practicable. All pipes and associated equipment will be required to be removed from the wetlands upon completion of the pumping operations on November 30 of each year. In addition, after the 2016 pumping activities have been concluded and the pipelines removed, the applicant will restore the impacted area by re-grading if necessary, and planting of native species. Mitigation for the temporary impacts to halophytic wetlands will be satisfied through the purchase of mitigation credits from the Florida Power and Light Company Everglades Mitigation Bank (EMB). The wetland restoration and enhancement projects conducted within the EMB have enhanced the properties in the South Dade Wetland Basin by removing exotic vegetation, replanting with native species, restoring filled areas to natural wetland grade and implementing a fire management program. Federal, State and local regulatory permits issued for the EMB require monitoring and maintenance of the EMB in perpetuity.

The proposed project site is not located within an area designated as essential manatee habitat for the *Trichechus manatus* (West Indian Manatee) by the Miami-Dade County Manatee Protection Plan (MPP); however, the Class I permit will require that all standard construction permit conditions regarding manatees be followed during all in-water operations.

2. **Potential Cumulative Adverse Environmental Impact** – The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term withdrawal of water that will be conditionally authorized based on real time flow monitoring, and therefore is not reasonably expected to result in cumulative adverse environmental impact, as set forth in Number 1 above.
3. **Hydrology** – The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term pumping of water from the L31E canal into the cooling canal system, subject to the conditions of the SFWMD Final Order. The project only proposes to pump water that would otherwise be discharged to Biscayne Bay; therefore, the project is not reasonably expected to adversely affect surface water drainage or retention of stormwater, as set forth in Number 1 above.
4. **Water Quality** – The proposed project may affect water quality; however, the Class I permit will require that water quality monitoring be conducted with reports be provided to DERM, and that FPL take corrective action if unacceptable water quality impacts are detected. In addition, all pumps are required to be manned by pump operators on site 24 hours per day and proper turbidity controls will be required to be implemented to ensure turbidity levels do not exceed State and County water quality standards.
5. **Wellfields** – The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term withdrawal of water that will be conditionally authorized based on real time flow monitoring, and therefore is not reasonably expected to adversely affect wellfields, as set forth in Number 1 above.
6. **Water Supply** – The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term withdrawal of water that will be conditionally authorized based on real time flow monitoring, and therefore is not reasonably expected to adversely affect water supply, as set forth in Number 1 above.
7. **Aquifer Recharge** – The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term pumping of water from the L31E canal into the cooling canal system, subject to the conditions of the SFWMD Final Order. The project only proposes to pump water that would otherwise be discharged to Biscayne Bay. Therefore, the project is not reasonably expected to adversely affect aquifer recharge, as set forth in Number 1 above.

8. **Aesthetics** – The proposed project is not reasonably expected to adversely affect aesthetics.
9. **Navigation** – The proposed project is not reasonably expected to adversely affect navigation.
10. **Public Health** – The proposed project is not reasonably expected to adversely affect public health.
11. **Historic Values** – The proposed project is not reasonably expected to adversely affect historic values.
12. **Archaeological Values** – The proposed project is not reasonably expected to adversely affect archaeological values.
13. **Air Quality** – The proposed project is not reasonably expected to adversely affect air quality.
14. **Marine and Wildlife Habitats** – The proposed project not reasonably expected to adversely affect marine and wildlife habitats, unavoidable impacts have been minimized and will be mitigated as set forth in Number 1 above.
15. **Wetland Soils Suitable for Habitat** – The proposed project not reasonably expected to adversely affect wetland soils suitable for habitat, and does not include excavation or filling of wetlands; unavoidable impacts have been minimized and will be mitigated as set forth in Number 1 above.
16. **Floral Values** – The proposed project will result in temporary impacts to 0.24 acres of halophytic wetlands; however, impacts to floral values have been minimized and will be mitigated as set forth in Number 1 above.
17. **Fauna Values** – The proposed project is not reasonably expected to impact fauna values.
18. **Rare, Threatened and Endangered Species** – The proposed project site has the potential to be utilized by the *Crocodylus acutus* (American Crocodile) and the West Indian Manatee; however, the proposed project is not reasonably expected to adversely affect these species, and the Class I permit will require that standard construction conditions for manatees be implemented during all in-water work. The project is not located within critical habitat for *Halophila johnsonii* (Johnson's seagrass), a Federally Listed Threatened Species.
19. **Natural Flood Damage Protection** – The proposed project is not reasonably expected to adversely affect surface water drainage or retention of stormwater.
20. **Wetland Values** – The proposed project will result in temporary impacts to 0.24 acres of halophytic wetlands; however, impacts have been minimized and will be mitigated as set forth in Number 1 above.
21. **Land Use Classification** – Pursuant to Section 24-48.2(II)(B)(7), of the Code of Miami-Dade County, Florida, a substantiating letter was submitted stating that the proposed project does not violate any zoning laws.
22. **Recreation** – The proposed project does not conflict with the recreation element of the Miami-Dade County Comprehensive Development Master Plan.
23. **Other Environmental Values Affecting the Public Interest** – The proposed project is not reasonably expected to adversely affect other environmental values affecting the public interest, as set forth in Number 1 above. The proposed project and associated mitigation will occur on lands owned by Florida Power and Light Company, Miami-Dade County, and the State of Florida. Both Miami-Dade County and the State of Florida have provided authorization for the use of their lands for the proposed project.
24. **Conformance with Standard Construction Procedures and Practices and Design and Performance Standards** – The proposed project complies with the standard construction procedures and practices and design and performance standards of the applicable portions of the following:
  - a) Chapter 24 of the Code of Miami-Dade County
  - b) Chapter 33B of the Code of Miami-Dade County
25. **Comprehensive Environmental Impact Statement (CEIS)** – In the opinion of the Director, the proposed project is not reasonably expected to result in significant adverse environmental impacts or cumulative adverse environmental impacts as set forth in Numbers 1 and 2 above. Therefore, a CEIS was not required by RER-DERM to evaluate the project.
26. **Conformance with All Applicable Federal, State and Local Laws and Regulations** – The proposed project is in conformance with applicable State, Federal and local laws and regulations:
  - a) United States Clean Water Act (United States Army Corps of Engineers authorization is required)
  - b) South Florida Water Management District and Department of Environmental Protection (authorization is required)

27. **Conformance with the Miami-Dade County Comprehensive Development Master Plan (CDMP)** - In the opinion of the Director, the proposed project is in conformance with the CDMP. The following is a summary of the proposed project as it relates to the CDMP:

**LAND USE ELEMENT I:**

**Objective 3/Policies 3A, 3B, 3C** - Protection of natural resources and systems. - The proposed project is for temporary impacts to wetlands supporting halophytic vegetation for the installation of pipelines to provide for the additional short-term withdrawal of water that will be conditionally authorized based on real time flow monitoring, and therefore is consistent with the Conservation and Coastal Management Elements of the CDMP. The proposed project is compatible with surrounding land uses in Biscayne Bay and does not involve development in the Big Cypress area of Critical State concern or the East Everglades.

**TRANSPORTATION ELEMENT II**

**Aviation Subelement/Objective AV-5A** - Aviation System Expansion - There is no aviation element to the proposed project.

**Port of Miami River Subelement/Objective 3** - Minimization of impacts to estuarine water quality and marine resources. The proposed project is not located within the Miami River.

**CONSERVATION, AQUIFER RECHARGES AND DRAINAGE ELEMENT IV:**

**Objective 3/Policies 3A, 3B, 3D** - Wellfield protection area protection. - The proposed project is not reasonably expected to compromise wellfield protection, as set forth in Numbers 1 and 2 above.

**Objective 3/Policy 3E** - Limestone mining within the area bounded by the Florida Turnpike, the Miami-Dade/Broward Levee, N.W. 12 Street and Okeechobee Road. - The proposed project is not located within this area.

**Objective 4/Policies 4A, 4B, 4C** - Water storage, aquifer recharge potential and maintenance of natural surface water drainage. - The proposed project is not reasonably expected to adversely affect water storage, aquifer recharge potential or natural surface water drainage, as set forth in Numbers 1 and 2 above.

**Objective 5/Policies 5A, 5B, 5F** - Flood protection and cut and fill criteria - The proposed project is not reasonably expected to compromise flood protection.

**Objective 6/Policy 6A** - Areas of highest suitability for mineral extraction. - The proposed project is not located in an area proposed or suitable for mineral extraction.

**Objective 6/Policy 6B** - Guidelines for rock quarries for the re-establishment of native flora and fauna. - The proposed project is not located in a rock quarry.

**Objective 7/Policies 7A, 7C, 7D, 7J** - Wetland protection and restoration. - The proposed project is not reasonably expected to compromise wetland protection or restoration, as set forth in Numbers 1 and 2 above.

**Objective 9/Policies 9A, 9B, 9C** - Protection of habitat critical to Federal or State-designated threatened or endangered species. - The proposed project is not reasonably expected to adversely affect habitat critical to Federal or State-designated threatened or endangered species, as set forth in Number 18 above.

**COASTAL MANAGEMENT ELEMENT VII:**

**Objective 1/Policy 1A** - Tidally connected mangroves in mangrove protection areas - The proposed project is located within a designated "Mangrove Protection Area," and is consistent with the criteria for work within a "Mangrove Protection Area."

**Objective 1/ Policy 1B** - Natural surface flow into and through coastal wetlands. - The proposed project is not reasonably expected to compromise natural surface flow into and through coastal wetlands, as set forth in Numbers 1 and 2 above.

**Objective 1/ Policy 1C** - Elevated boardwalk access through mangroves. - The proposed project does not involve a boardwalk through mangroves.

**Objective 1/Policy 1D** - Protection and maintenance of mangrove forests and related natural vegetational communities. - The proposed project will result in temporary impacts to 0.24 acres of wetlands; however, the impacts have been minimized and will be mitigated as set forth in Number 1 above.

**Objective 1/Policy 1E** - Mitigation for the degradation and destruction of coastal wetlands. Monitoring and maintenance of mitigation areas. – The applicant will restore the impacted area by re-grading if necessary, planting of native species and monitoring. Mitigation for the temporary impacts to halophytic wetlands will be satisfied through the purchase of mitigation credits from the EMB. The wetland restoration and enhancement projects conducted within the EMB have enhanced the properties in the South Dade Wetland Basin by removing exotic vegetation, replanting with native species, restoring filled areas to natural wetland grade and implementing a fire management program. Federal, State and local regulatory permits issued for the EMB require monitoring and maintenance of the EMB in perpetuity.

**Objective 1/Policy 1G** - Prohibition on dredging or filling of grass/algal flats, hard bottom or other viable benthic communities, except as provided for in Chapter 24 of the Code of Miami-Dade County, Florida. – The proposed project does not involve dredging or filling of grass/algal flats, hard bottom, or other viable benthic communities.

**Objective 2/Policies 2A, 2B** - Beach restoration and renourishment objectives. - The proposed project does not involve beach restoration or renourishment.

**Objective 3/Policies 3E, 3F** - Location of new cut and spoil areas for proper stabilization and minimization of damages. - The proposed project does not involve the development or identification of new cut or spoil areas.

**Objective 4/Policy 4A, 4C, 4E, 4F** – Protection of endangered or threatened animal species - The proposed project is not reasonably expected to affect endangered or threatened animal species, as set forth in Number 18 above.

**Objective 5/Policy 5B** - Existing and new areas for water-dependent uses, - The proposed project does not involve a new water-dependent use.

**Objective 5/Policy 5D** - Consistency with Chapter 33D, Miami-Dade County Code (shoreline access, environmental compatibility of shoreline development) – The proposed project is not located within the Shoreline Development Review Boundaries; therefore, the proposed project is not subject to shoreline development review.

**Objective 5/Policy 5F** - The siting of water dependent facilities. - The proposed project does not involve the creation of any new water dependent facilities.

28. **Conformance with Chapter 33B, Code of Miami-Dade County** (East Everglades Zoning Overlay Ordinance) – The proposed project is consistent with Chapter 33B, Code of Miami-Dade County.
29. **Conformance with Miami-Dade County Ordinance 81-19** (Biscayne Bay Management Plan Sections 33D-1 through 33D-4 of the Code of Miami-Dade County) - The proposed project is consistent with the Biscayne Bay Management Plan as specified in Numbers 1 and 2 above.
30. **Conformance with the Miami-Dade County Manatee Protection Plan** - The proposed project was evaluated for consistency with the MPP, as set forth in Number 1 above.
31. **Consistency with Miami-Dade County Criteria for Lake Excavation** – The proposed project does not involve lake excavation.
32. **Municipality Recommendation** – Pursuant to Section 24-48.2(II)(B)(7), Code of Miami-Dade County, Florida, a substantiating letter was submitted stating that the proposed project does not violate any zoning laws.
33. **Coastal Resources Management Line** - A coastal resources management line was not required for the proposed project, pursuant to Section 24-48.2(II)(B)(10)(b) of the Code of Miami-Dade County.
34. **Maximum Protection of a Wetland's Hydrological and Biological Functions** – The proposed project will result in temporary impacts to 0.24 acres of wetlands; however, the impacts have been minimized and will be mitigated, and potential impacts to adjacent wetlands have been evaluated as specified in Numbers 1 and 2 above.
35. **Class I Permit Applications Proposing to Exceed the Boundaries Described in Section D-5.03(2)(a) of the Miami-Dade County Public Works Manual Class I Permit Applications Proposing to Exceed the Boundaries Described in Section D-5.03(2)(a) of the Miami-Dade County Public Works Manual** – Not Applicable

The proposed project was also evaluated for compliance with the standards contained in Sections 24-48.3(2),(3), and (4) of the Code of Miami-Dade County, Florida. The following is a summary of how the standards relate to the proposed project:

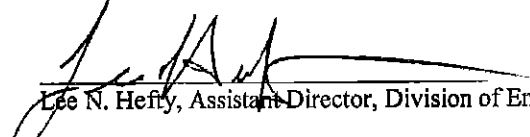
**24-48.3 (2) Dredging and Filling for Class I Permit** – Not Applicable

24-48.3 (3) Minimum Water Depth Required for Boat Slips Created by the Construction or Placement of Fixed or Floating Docks and Piers, Piles and Other Structures Requiring a Permit Under Article IV, Division 1 of Chapter 24 of the Code of Miami-Dade County – Not Applicable

24-48.3 (4) Clean Fill in Wetlands – Not Applicable

BASED ON THE FOREGOING, IT IS RECOMMENDED THAT A CLASS I PERMIT BE APPROVED.

  
Lisa Spadafina, Chief, Natural Resources Division

  
Lee N. Hefty, Assistant Director, Division of Environmental Resources Management